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(54) **CLEANING IMPLEMENT**

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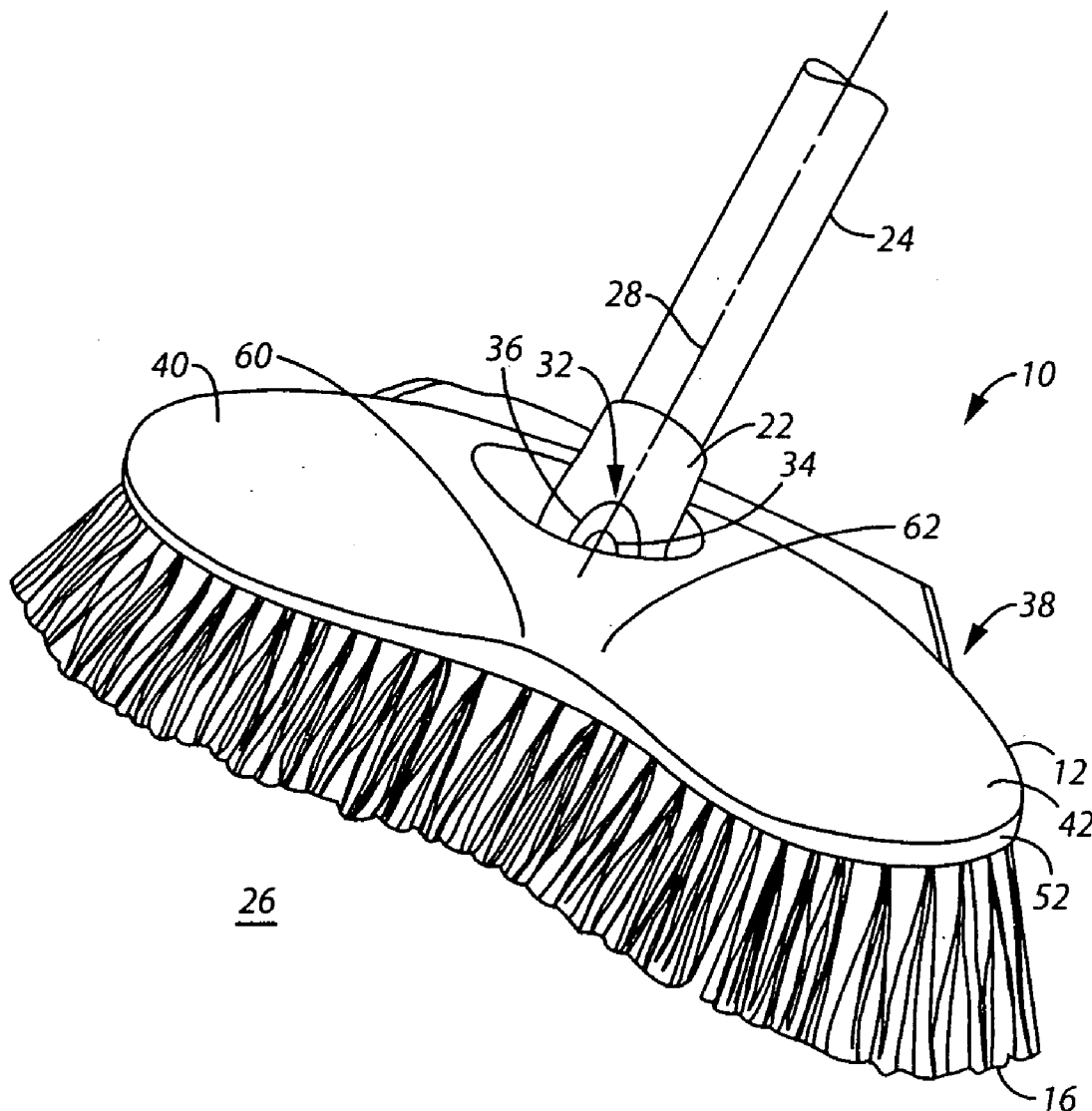
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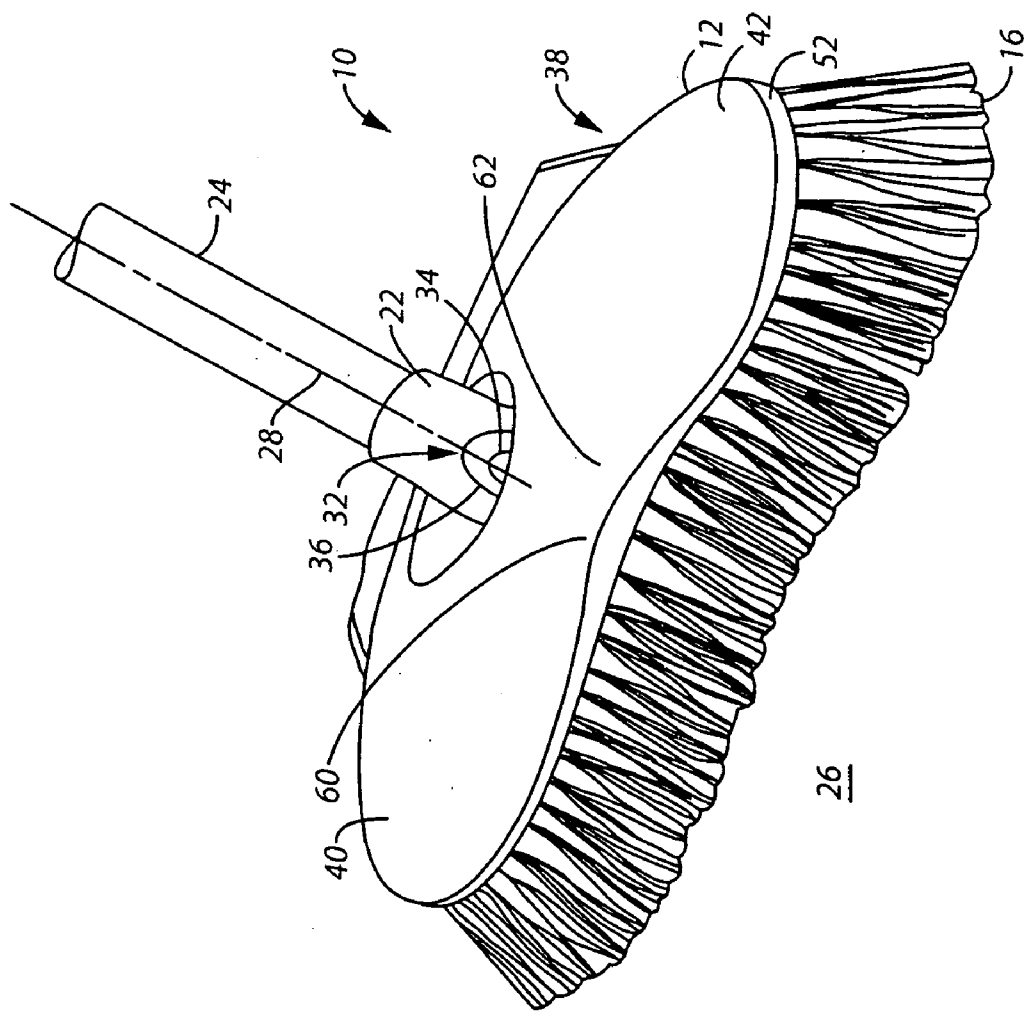
(57) **ABSTRACT**

A cleaning implement formed from a body and a handle attachment base provided on the body for removable attachment of a handle to the body. The body has a gripping portion on the body. The gripping portion is ergonomically shaped to be gripped by a user's hand. The cleaning implement is usable both with a handle adapted for attachment to the handle attachment base and without a handle by gripping of the gripping portion by a user. The cleaning implement may be adapted for use with different handles.

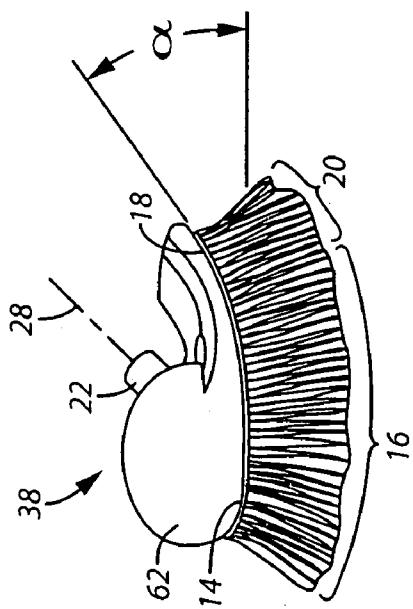
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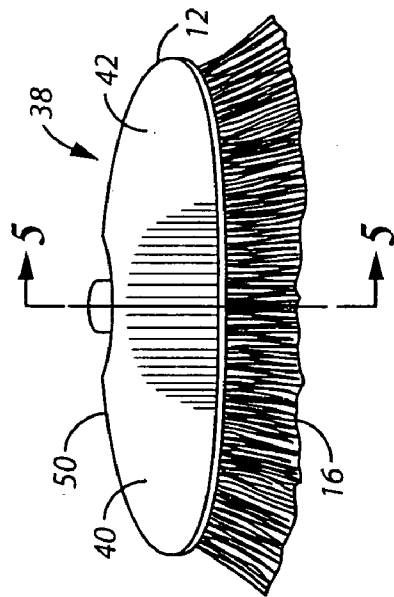




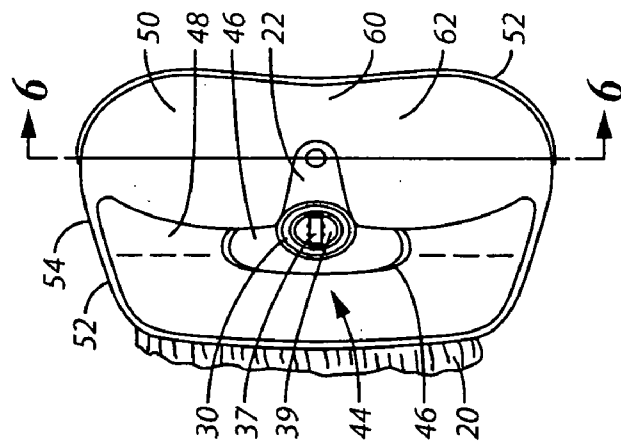
**FIG. 1**



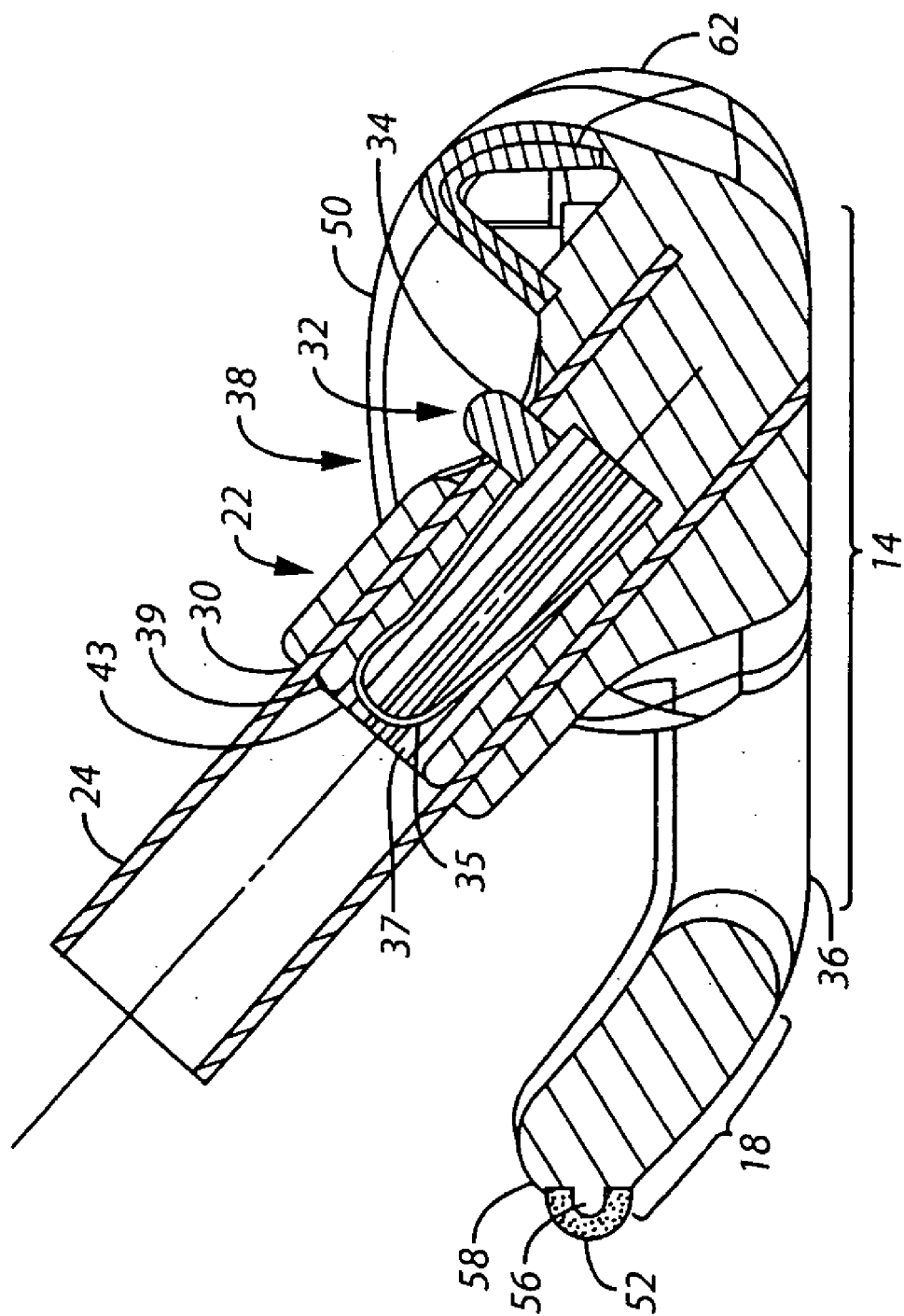
**FIG. 3**



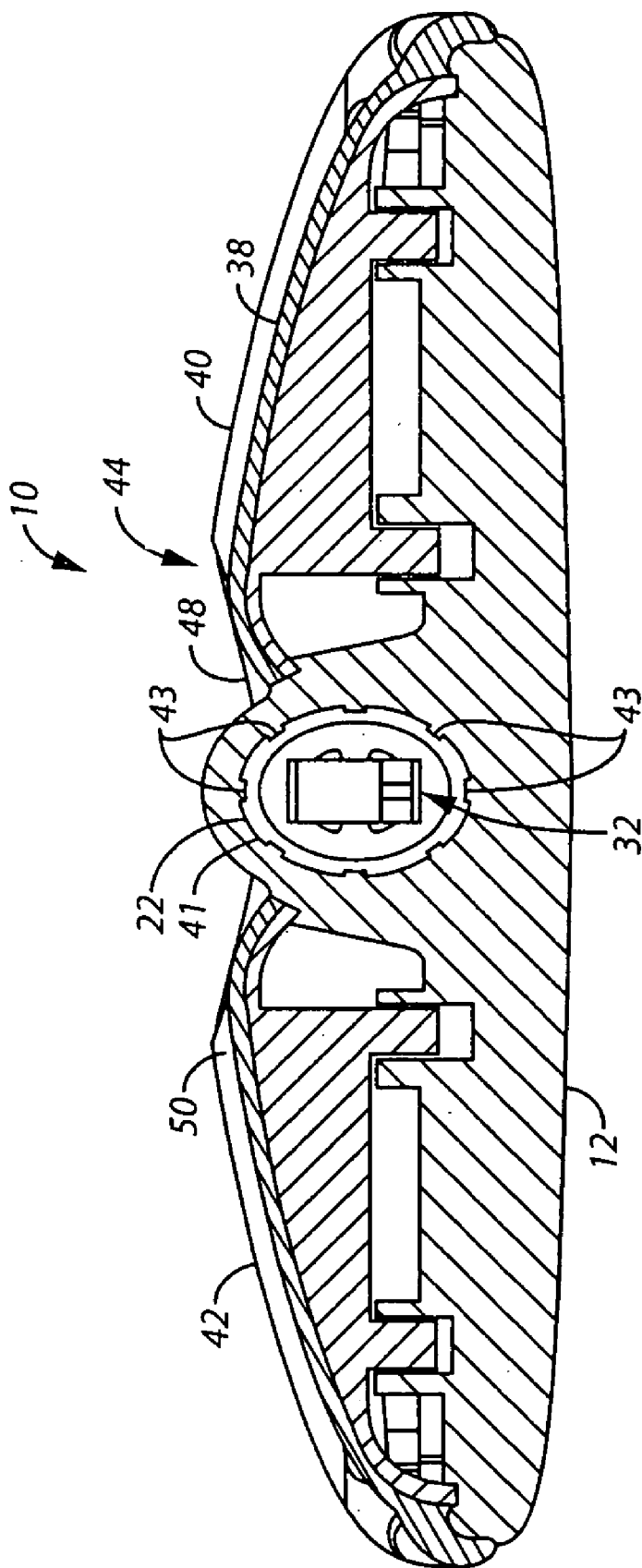
**FIG. 4**



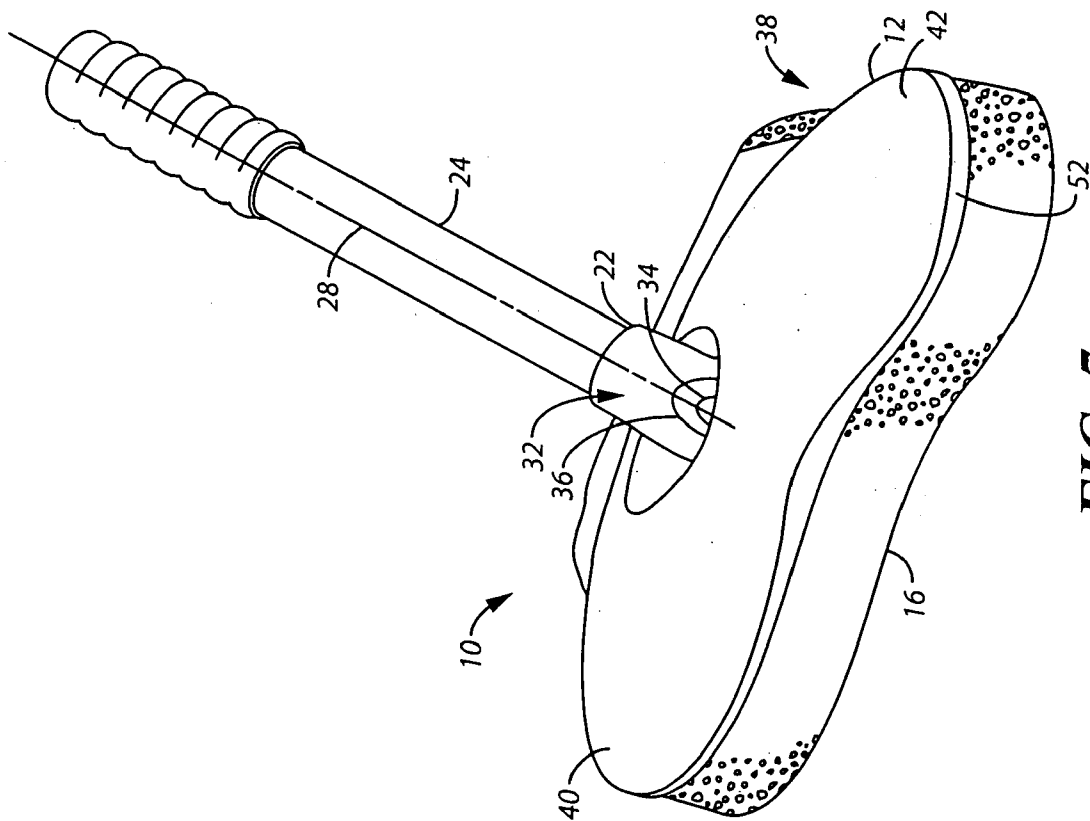
**FIG. 2**



**FIG. 5**



**FIG. 6**



## CLEANING IMPLEMENT

### FIELD OF THE INVENTION

[0001] This invention is directed generally to cleaning devices, and more particularly to cleaning devices for cleaning surfaces.

### BACKGROUND OF THE INVENTION

[0002] In general, cleaning devices such as brush heads are used together with cylindrical handles in broom configurations. Typically, the cleaning devices have bristles extending perpendicularly from a brush block to which the handle is attached. The handle is attachable to a handle attachment fastener that is typically affixed to or is part of the brush block. The handle is positioned to be held comfortably by a user in a standing position while the bristles are positioned perpendicular to the surface being swept. The handle may be removably attachable to a brush head enabling different length handles to be used, for easier storage, and to allow replacement of a brush head once the bristles become worn. Known brush heads of this type are disclosed in U.S. Pat. No. 6,523,212 to Cesak et al., U.S. Pat. No. 6,499,176 to Hammond, U.S. Pat. No. 6,349,444 to Sander and U.S. Pat. No. 3,891,339 to Jeffers.

[0003] The known brush heads designed for use in a long handled broom are typically difficult for a user to use without an attached handle, as a handheld brush. The handle attachment fastener typically takes up much of the upper surface of the brush head, or the brush head has sharp edges that are uncomfortable for a user to grip.

[0004] Such prior art brush heads are also difficult to use with a short handle for use close to the user's arm because a short handle is typically gripped by a user in a position parallel to the surface to be scrubbed. Thus, when a brush head designed for use in a standing position is attached to a short handle, a user must position their wrist at about a 45 degree angle to the surface to be swept in order that the bristles remain perpendicular to the surface to be scrubbed. Such a position is uncomfortable to the user, and not ergonomic.

[0005] Thus, there exists needs for a cleaning implement that may be used interchangeably by a user with a long handle as a broom, a mop, a polisher or other cleaning implement; a cleaning implement that is interchangeable with an extendible handle; a cleaning implement that is interchangeable with a short handle; and a cleaning implement usable as a handheld brush or cleaning implement to provide flexibility of use.

### SUMMARY OF THE INVENTION

[0006] This invention is directed to a cleaning implement usable to scrub or brush surfaces. The cleaning implement includes a body including a region adapted to receive a cleaning material. A handle attachment base is provided on the body allowing removable attachment of a handle to the body, and defining a handle axis. A gripping portion is also provided on the body, the gripping portion being ergonomically shaped to be gripped by a user's hand. The cleaning implement is usable both with a handle adapted for attachment to the handle attachment base and without a handle by gripping of the gripping portion by a user.

[0007] The cleaning material may be, but is not limited to, bristles, a sponge, a scrubbing pad, a buffing pad, a polishing pad, a cleaning cloth, or other appropriate material.

[0008] The cleaning implement may have a bi-level configuration including first and second regions adapted to hold cleaning materials enabling the cleaning implement to be used at different angles. More specifically, the cleaning implement may include a first region adapted to receive a cleaning material and a second region adapted to receive a cleaning material, wherein the first region adapted to receive a cleaning material is positioned between about 30 degrees and about 60 degrees relative to the handle axis. The first region may be adapted to receive a cleaning material is positioned about 45 degrees relative to the handle axis. The second region may be adapted to receive a cleaning material is positioned generally parallel to the handle axis. This configuration enables the cleaning implement to be used to clean a surface using a handle at an angle of about 45 degrees relative to a surface to be cleaned or generally parallel to a surface to be cleaned without making any adjustments to the cleaning implement, in addition to being able to be used while being gripped by a user.

[0009] The cleaning implement may also include numerous features aiding the use of the cleaning implement as a handheld scrubber. The gripping portion may be formed from a first landing adapted to receive a right hand of a user and a second landing adapted to receive a left hand of a user. The first and second landings may be separated by the handle attachment base. The cleaning implement may also include a digit receiving area. The digit receiving area may include an aperture in the body, which may for example be positioned underneath the handle attachment base, for receiving a thumb. The digit receiving area may alternatively or in addition be a depression in a surface of the body, such as proximate to the handle attachment base, for receiving a thumb. The digit receiving area may be an indentation in a front surface of the body for receiving one or more fingers of a user.

[0010] In at least one embodiment, the cleaning implement may be included as a component of a kit. The kit may include the cleaning implement, and a detachable handle adapted for attachment to the cleaning implement. In at least one arrangement, the kit may include different first and second detachable handles, one of the handles being longer and usable from a standing position, and another of the handles being shorter and usable from a kneeling or other lower position.

[0011] The kit may include an additional implement, which may be another cleaning implement or a tool. The second implement may be selected from a brush, a mop, a squeegee, a polisher, a boat hook, a gaff hook, an oar, and a net. This arrangement enables a small number of parts to be used interchangeably to give a range of usable implements, which is particularly useful where storage space is at a premium, such as on a boat, recreational vehicle, etc.

[0012] An advantage of this invention is that the cleaning implement may be used both with a handle and without. In addition, another advantage of this invention is that the bi-level configuration enables the cleaning implement to be used at two distinctly different angles with an attached handle. In particular, the bi-level configuration enables the

cleaning implement to be used effectively with a short handle close to a user's body as well as with long handles for use in a standing position.

[0013] A further advantage of this invention is that the bumper provides a protective barrier on the rigid body forming the cleaning implement. The bumper allows the cleaning implement to be used on objects susceptible to damage without risk of damaging the objects.

[0014] These and other embodiments will be described in more detail below.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0015] There are shown in the drawings embodiments which are presently preferred, it being understood, however, that the invention is not limited to the precise arrangements shown.

[0016] FIG. 1 is a perspective view of a cleaning implement according to an embodiment of the invention.

[0017] FIG. 2 is a top view of the embodiment of the invention shown in FIG. 1.

[0018] FIG. 3 is a right side view of the embodiment of the invention shown in FIG. 1.

[0019] FIG. 4 is a front view of the embodiment of the invention shown in FIG. 1.

[0020] FIG. 5 is a cross-sectional view of the embodiment of the invention shown in FIG. 1 taken at line 5-5 in FIG. 4 without showing a cleaning material attached.

[0021] FIG. 6 is a cross-sectional view of the embodiment of the invention shown in FIG. 1 taken at line 6-6 in FIG. 2 without showing a cleaning material attached.

[0022] FIG. 7 is a perspective view of a cleaning implement having an alternative cleaning material attached.

#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0023] This invention, as shown in FIGS. 1-7, is directed to a cleaning implement 10, which may be useful in cleaning yachts, boats, recreational vehicles, automobiles, motorcycles, mobile homes, cabins, and any other use where storage space for a large number of cleaning implements may be at a premium. The cleaning implement 10 may be adapted to be releasably coupled to one or more handles for facilitating use of the cleaning implement 10. As shown in FIG. 3, the cleaning implement 10 may be formed from a body 12 formed from a first region 14 for receiving a cleaning material 16 and a second region 18 for receiving a cleaning material 20. The first region 14 may be positioned at an angle  $\alpha$  of between about 30 degrees and about 60 degrees relative to the second region 18. In at least one embodiment, the first region is positioned at an angle  $\alpha$  of about 45 degrees relative to the second region 18. The first region 14 is offset relative to the second region 18 to enable the cleaning implement 10 to be used in different positions. For instance, the first region 14 may be used while a handle 24 is at about 45 degrees relative to a surface 26 to be cleaned, and the second region 18 may be used while the handle 24 is generally parallel to the surface 26 to be cleaned. Different handles 24 having differing lengths may be employed. For example, a relatively long handle 24 may

be used at about 45 degrees to the surface to be cleaned, enabling a user to stand upright while cleaning. A relatively short handle 24 may be used parallel to the surface to be cleaned, enabling a user to scrub or otherwise clean a surface from a kneeling or other suitable position.

[0024] The cleaning material 16 and 20 shown in FIGS. 1-4 and 7 may be formed from a plurality of bristles forming a brush, a sponge, a scrubbing pad, a buffing pad, a polishing pad, a cleaning cloth, a squeegee, other appropriate materials, or any combination thereof. The cleaning materials 16 and 20 may or may not be formed from the same materials or combinations of materials. The body 12 may be formed from a rigid plastic, wood, or other appropriate material. In at least one embodiment, the body 12 may be about eight inches in length, 5 inches in width and about 2 inches in depth and have a sufficient mass capable of enabling the cleaning implement to be used as a scrubber.

[0025] The body 12 may also include a handle attachment base 22 for receiving a handle 24. The handle attachment base 22 may be attached to the body 12 in a generally central location, as shown in FIGS. 1, 2, 4, 6, and 7. The handle attachment base 22 may be attached to the body 12 so that a longitudinal axis 28 of the handle attachment base 22 is generally parallel with the surface forming the second region 18. In this position, the longitudinal axis 28 of the handle attachment base 22 may be between about 30 degrees and about 60 degrees relative to the first region 14, depending on the angle  $\alpha$  between the first and second regions 14, 18.

[0026] In at least one embodiment, as shown in FIG. 2, the handle attachment base 22 may include at least one cavity 30 sized to receive a variety of handles 24. The handle attachment base 22 may also include one or more retention mechanisms 32 for preventing the handle 24 from being inadvertently released from the handle attachment base 22. The retention mechanism 32 may be formed from a spring loaded retention pin 34. As shown in FIG. 5, the retention pin 34 is coupled to a spring 35. The spring 35 may be sized to fit into a cavity 37 in an inner tube 39.

[0027] An inner surface 41 of the cavity 30 may be sized to provide a tight fit between a handle attachment base 22 and a handle 24. In at least one embodiment, an inner diameter of the cavity 30 may be slightly larger than an outer diameter of a handle 24, thereby providing a tight fit. Alternatively, the inner diameter of the cavity 30 may be less than or equal to an outer diameter of the handle, thereby creating an interference fit.

[0028] In at least one embodiment, the inner surface of the cavity 30 may include a plurality of ribs 43, as shown in FIGS. 5 and 6. In at least one embodiment, the ribs 43 may account for between about 15 percent and about 35 percent of the surface area of the cavity 30 and may be sized to provide an interference fit. This configuration enables the handle 24 to be releasably and tightly coupled to the handle attachment base 22 with no side-to-side play in the connection.

[0029] The retention pin 34 may be configured to be depressed to allow a handle 24 to be inserted into the cavity 30. The retention pin 34 may return to its original position and retain a handle 24 in position in the cavity 30 by entering an aperture or depression 36 in the handle 24. The ribs 43 provide a tight fit yet enable the handle 24 to be rotated while



the handle **24** is inserted into the handle attachment base **22** to allow the retention pin **34** to enter into the aperture **36** in the handle **24**.

[0030] The cleaning implement **10** may also include a gripping portion **38**, as shown in FIGS. **1**, **6**, and **7**, for providing a location at which a user may grip the cleaning implement **10** while using the, cleaning implement **10** as a handheld scrubber. The gripping portion is ergonomically shaped to fit a user's hand. The term gripping portion is intended to cover both a gripping pad attached to the body, and also an arrangement where the gripping portion is integral with the body and is formed of a shaped area of the body. The gripping portion **38** may be formed out of materials providing a relatively soft comfortable surface upon which a user may apply force to the cleaning implement **10** while using the cleaning implement **10** as a handheld scrubber. In at least one embodiment, the gripping portion **38** may be formed from a resilient plastic or other appropriate material. The gripping portion **38** may be formed from numerous configurations. In at least one embodiment, the gripping portion **38** may be formed from a first landing **40** and a second landing **42**. The first landing **40** may be adapted to receive a right hand of a user, and the second landing **42** may be adapted to receive a left hand of a user, or vice versa. The first and second landings **40**, **42** may be separated by the handle attachment base **22**, which may result in the gripping portion **38** having an hourglass shape, as shown in FIG. **2**. The shapes of each of the first and second landings **40**, **42** are ergonomically configured.

[0031] The cleaning implement **10** may also include at least one thumb receiving area **44** for providing a user with a comfortable location for a user's thumbs when the cleaning implement is used as a handheld device. In at least one embodiment, the at least one thumb receiving area **44** may be an aperture **46** in the body **12**, as shown in FIGS. **2** and **5**. The aperture **46** may be positioned at a transition between the first region **14** and the second region **18**. The thumb receiving area **44** may also be formed from a depression **48** in a top surface **50** of the cleaning implement **10**, which may provide an appropriate resting position for the base of a user's thumb. The depression **48** may be sized and configured to receive one or more thumbs of a user so that a user can comfortably hold the cleaning implement in either hand.

[0032] The cleaning implement **10** may also include a bumper **52** around at least a portion of the perimeter **54** of the body **12**, as shown in FIGS. **1**, **2**, **5**, and **7**. The bumper **52** may be formed from numerous materials, such as, but not limited to, a resilient plastic or other appropriate materials. In at least one embodiment, the bumper **52** may be formed from the same resilient plastic as the gripping portion **38**. The bumper **52** may attach to a protrusion **56** extending from an edge **58** of the body **12**. In at least one embodiment, the bumper **52** may be integrally formed with the gripping portion **38**.

[0033] As shown in FIG. **2**, the cleaning implement **10** may include one or more indentations **60** on a front surface **62** of the body **12**. The indentation **60** is configured to receive one or more fingers of a user. The indentation **60** may be formed in a portion of the body **12** and an area of the gripping portion **38**. The cleaning implement **10** may also include a non-slip coating for increasing a user's ability to grip the body **12** of the cleaning implement **10**. The coating

may be formed from any appropriate material, including, but not limited to, thermoplastic rubber, or a material having a relatively low durometer reading. In alternative embodiments, the cleaning implement **10** may not include a coating.

[0034] The cleaning implement **10** may be used to clean surfaces on a variety of different objects. Handles **24** of different sizes and configurations may be coupled to the cleaning implement **10** depending on the application. In at least one embodiment, a handle having an adjustable length may be used. The cleaning implement **10** may be used by controlling the cleaning implement **10** with a handle **24** or by grasping the cleaning implement **10**. The first and second regions **14**, **18** enable the cleaning implement to be used with the handle **24** at an angle of about 45 degrees relative to a surface to be cleaned or generally parallel with a surface to be cleaned. This is extremely helpful when using the cleaning implement **10** to clean a surface **26** close to a user's body or underneath a shelf or other object preventing the handle **24** from being used while in an upright manner.

[0035] The cleaning implement **10** may be used in a handheld manner by grabbing the gripping portion **38**. The palms of a user's hands fit comfortably on the first and second landings **40**, **42** of the gripping portion, and the thumbs of the user's hands may rest in the thumb receiving area **44**. More specifically, a user's thumbs may be positioned in the aperture **46** and/or the depression **48**. One or more of the user's fingers may be positioned in the indentation **60** on the front surface **62** of the body **12**.

[0036] The cleaning implement **10** may also be included with another implement as a part of a kit. The additional implement may be, but is not limited to, a brush, a mop, a squeegee, a boat hook, a gaff hook, an oar, a polisher, a net, or other such device. In addition, the kit may include a handle **24** for attachment to one of a plurality of implements **10**. In at least one arrangement, different handles **24** of differing lengths may be provided in the kit.

[0037] The cleaning implement **10** may be formed by forming the body **12** of a rigid material, forming a gripping portion of a resilient plastic adapted to conform to the contours of a human hand, attaching a cleaning material to the first region for receiving a cleaning material, and attaching a cleaning material to the second region for receiving a cleaning material. The cleaning implement **10** may be formed to include additional features, as previously described.

[0038] It should be understood that the examples and embodiments described herein are for illustrative purposes only and that various modifications or changes in light thereof will be obvious to persons skilled in the art, and that such modifications or changes are to be included within the spirit and purview of this application. Moreover, the invention can take other specific forms without departing from the spirit or essential attributes thereof.

I claim:

1. A cleaning implement comprising:

- a body including a region adapted to receive a cleaning material;
- a handle attachment base on the body allowing removable attachment of a handle to the body, and defining a handle axis; and

- a gripping portion on the body, wherein the gripping portion is ergonomically shaped to be gripped by a user's hand,
- whereby the cleaning implement is usable both with a handle adapted for attachment to the handle attachment base and without a handle by gripping of the gripping portion by a user.
2. The cleaning implement of claim 1, wherein the cleaning material is selected from the group consisting of a plurality of bristles forming a brush, a sponge, a scrubbing pad, a buffing pad, a polishing pad, and a cleaning cloth.
3. The cleaning implement of claim 1, wherein the region adapted to receive a cleaning material is formed from a first region adapted to receive a cleaning material and a second region adapted to receive a cleaning material, wherein the first region adapted to receive a cleaning material is positioned between about 30 degrees and about 60 degrees relative to the handle axis.
4. The cleaning implement of claim 3, wherein the first region adapted to receive a cleaning material is positioned about 45 degrees relative to the handle axis.
5. The cleaning implement of claim 3, wherein the second region adapted to receive a cleaning material is positioned generally parallel to the handle axis.
6. The cleaning implement of claim 1, wherein the gripping portion comprises a first landing for receiving a right hand of a user and a second landing for receiving a left hand of a user.
7. The cleaning implement of claim 6, wherein the first landing and the second landing are separated by the handle attachment base.
8. The cleaning implement of claim 1, wherein the body further comprises at least one digit receiving area.
9. The cleaning implement of claim 8, wherein the at least one digit receiving area comprises an aperture in the body.
10. The cleaning implement of claim 8, wherein the at least one digit receiving area comprises a depression in a surface of the cleaning implement.
11. The cleaning implement of claim 8, wherein the digit receiving area comprises at least one indentation in a front surface of the body.
12. The cleaning implement of claim 1, wherein the gripping portion is comprised of a resilient plastic.
13. The cleaning implement of claim 1, wherein the gripping portion has an hourglass shape when viewed from above for ergonomic considerations.
14. The cleaning implement of claim 1, further comprising at least one non-slip coating on the gripping portion.
15. The cleaning implement of claim 1, further comprising at least one bumper around at least a portion of the perimeter of the body.
16. The cleaning implement of claim 15, wherein the at least one bumper is comprised of a resilient plastic.
17. The cleaning implement of claim 1, wherein the body and the handle attachment base are formed from a rigid plastic.
18. The cleaning implement of claim 1, wherein the handle attachment base further comprises a plurality of ribs on an inner surface of a cavity in the handle base attachment, wherein the ribs are sized to provide an interference fit with a handle.
19. The cleaning implement of claim 18, wherein the handle attachment base further comprises a retention mechanism to retain a handle in the handle attachment base.

20. A cleaning implement kit, comprising:
- a cleaning implement, comprising:
- a body including a region adapted to receive a cleaning material;
  - a handle attachment base on the body allowing removable attachment of a handle to the body, and defining a handle axis; and
  - a gripping portion on the body, wherein the gripping portion is ergonomically shaped to be gripped by a user's hand,
- whereby the cleaning implement is usable both with a handle adapted for attachment to the handle attachment base and without a handle by gripping of the gripping portion by a user; and
- a removable handle adapted for attachment to said handle attachment base.
21. The cleaning implement kit of claim 20, wherein the cleaning material is selected from the group consisting of a plurality of bristles forming a brush, a sponge, a scrubbing pad, a buffing pad, a polishing pad, a cleaning cloth, and a squeegee.
22. The cleaning implement kit of claim 20, wherein the region adapted to receive a cleaning material is formed from a first region adapted to receive a cleaning material and a second adapted to receive a cleaning material, wherein the first region adapted to receive a cleaning material is positioned between about 30 degrees and about 60 degrees relative to the handle axis.
23. The cleaning implement kit of claim 22, wherein the first region adapted to receive a cleaning material is positioned about 45 degrees relative to the handle axis.
24. The cleaning implement kit of claim 22, wherein the second region adapted to receive a cleaning material is positioned generally parallel to the handle axis.
25. The cleaning implement kit of claim 20, wherein the removable handle has an adjustable length.
26. The cleaning implement kit of claim 20, comprising at least two removable handles, each said removable handle having a different length.
27. The cleaning implement kit of claim 20, wherein the gripping portion comprises a first landing for receiving a right hand of a user and a second landing for receiving a left hand of a user.
28. The cleaning implement kit of claim 27, wherein the first landing and the second landing are separated by the handle attachment base.
29. The cleaning implement kit of claim 20, wherein the body further comprises at least one digit receiving area.
30. The cleaning implement kit of claim 29, wherein the at least one digit receiving area comprises an aperture in the body.
31. The cleaning implement kit of claim 29, wherein the at least one digit receiving area comprises a depression in a top surface of the cleaning implement.
32. The cleaning implement kit of claim 20, wherein the gripping portion is comprised of a resilient plastic.
33. The cleaning implement kit of claim 20, wherein the gripping portion has an hourglass shape when viewed from above for ergonomic considerations.

**34.** The cleaning implement kit of claim 20, further comprising at least one non-slip coating on the gripping portion.

**35.** The cleaning implement kit of claim 20, further comprising at least one bumper around at least a portion of the perimeter of the body.

**36.** The cleaning implement kit of claim 35, wherein the at least one bumper is comprised of a resilient plastic.

**37.** The cleaning implement kit of claim 20, wherein the body and the handle attachment base are formed from a rigid plastic.

**38.** The cleaning implement kit of claim 20, wherein the handle attachment base further comprises a plurality of ribs on an inner surface of a cavity in the handle base attachment,

wherein the ribs are sized to provide an interference fit with the handle.

**39.** The cleaning implement kit of claim 38, wherein the handle attachment base further comprises a retention mechanism to retain the handle in the handle attachment base.

**40.** The cleaning implement kit of claim 20, further comprising a second implement comprising a handle attachment base matching the handle attachment base on the first implement, allowing removable attachment of the handle to the second implement.

**41.** The cleaning implement kit of claim 40, wherein the second implement is selected from the group consisting of a brush, a mop, a squeegee, a polisher, a boat hook, a gaff hook, an oar, and a net.

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