(57) Abstract: A mop bucket can be used to apply liquid to a stack of flat mop pads. The mop bucket includes a container body with an opening at a top portion thereof, a liquid storage area within the container body, and a pad storage area within the container body and in fluid communication with the liquid storage area. The liquid storage area is below the pad storage area when the bucket is in an upright position. The mop bucket also includes a lid configured to form a substantially liquid-tight seal of the opening of the container body.
Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
DISINFECTING BUCKET
CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application Nos. 60/567,794 (filed May 5, 2004), 60/637,440 (filed December 21, 2004), and 60/646,986 (filed January 27, 2005), which are incorporated herein by reference in their entirety.

BACKGROUND

[0002] Flat mop pads are useful in a variety of applications. They can be used, for example, to disinfect the floors of patient rooms in hospitals. In particular, disinfecting liquid is applied to a flat mop pad, and the flat mop pad is then used to spread the disinfecting liquid over the floor in a patient’s room.

[0003] It is desirable to reduce the risk of cross-contamination by using a different pad in each patient’s room. Thus, it is advantageous to have a consolidated supply of flat mop pads that contain disinfecting liquid. The user can select a flat mop pad from the supply and use it to disinfect a patient’s room, and then select a new flat mop pad from the supply when he or she moves to a new room.

[0004] One technique for providing a supply of flat mop pads is to apply disinfecting liquid to a stack of flat mop pads. This can be done by pouring disinfecting liquid in a bucket, placing a stack of flat mop pads in the bucket, attaching a lid to the bucket to seal its opening, and inverting the bucket to cause the disinfecting liquid to enter the stack of flat mop pads. After the lid is removed, the bucket contains a stack of flat mop pads that are impregnated with disinfecting liquid and are ready for use.

[0005] This technique is disadvantageous because some of the flat mop pads become oversaturated with disinfecting liquid. Not all of the disinfecting liquid is absorbed by the flat mop pads. Thus, after the bucket is returned to its upright position, a pool of disinfecting liquid will form at the bottom of the bucket. The flat mop pads at the bottom of the stack will sit in this pool and become oversaturated. This is problematic
because disinfecting buckets often do not include a wringer for wringing out excess disinfecting liquid. When the user removes the oversaturated flat mop pads, the disinfecting liquid will drip onto the floor.

SUMMARY

[0006] An aspect of the present invention relates to a mop bucket for applying liquid to a stack of flat mop pads. The mop bucket includes a container body with an opening at a top portion thereof, a liquid storage area within the container body, and a pad storage area within the container body and in fluid communication with the liquid storage area. The liquid storage area is below the pad storage area when the bucket is in an upright position. The mop bucket also includes a lid configured to form a substantially liquid-tight seal of the opening of the container body.

[0007] Another aspect of the present invention relates to a method of applying liquid to a stack of flat mop pads. The method includes the step of providing a bucket having a container body, a lid for the container body, a liquid storage area within the container body, and a pad storage area within the container body. The liquid storage area and the pad storage area are in fluid communication, and the liquid storage area is below the pad storage area when the bucket is in an upright position. The method further includes the steps of pouring liquid into at least the liquid storage area, placing a stack of flat mop pads in the pad storage area, attaching the lid to the container body containing the liquid and stack of pads to seal the container body, at least partially inverting the bucket to distribute the liquid into the pad storage area for absorption by the stack of flat mop pads, and removing the lid from the container body.

[0008] It is to be understood that both the foregoing general description and the following detailed description are merely exemplary of the invention, and are intended to provide an overview or framework for understanding the nature and character of the invention as it is claimed. The accompanying drawings are included to provide a further understanding of the invention, and are incorporated in and constitute a part of this specification. The drawings illustrate various embodiments of the invention, and together with the description serve to explain the principles and operation of the invention.
BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Figure 1 is a perspective view of the interior of a mop bucket according to the present invention, without a lid;

[0010] Figure 2 is a perspective view of the exterior of the mop bucket of Figure 1, with a lid;

[0011] Figure 3 is a top view of the mop bucket of Figure 1 without a lid;

[0012] Figure 4 is a side cross-sectional view of the mop bucket of Figure 1, without a lid and with flat mop pads within the mop bucket;

[0013] Figure 5 is a side cross-sectional view of the mop bucket of Figure 1, with a lid, with flat mop pads within the mop bucket, and in a partially inverted position.

DETAILED DESCRIPTION

[0014] Presently preferred embodiments of the invention are illustrated in the drawings. An effort has been made to use the same or like reference numbers throughout the drawings to refer to the same or like parts.

[0015] A first embodiment of a mop bucket according to the present invention is shown in Figures 1-5. The mop bucket 10 is configured to apply liquid, preferably disinfectant, to a stack of flat mop pads 70. The phrase flat mop pads is used herein to refer to mop pads that are substantially flat, though minor deviations from flat are to be expected and are intended to be within the scope of this phrase. The mop bucket 10 preferably has a container body 20, a pad storage area 30, a liquid storage area 40, and a lid 50.

[0016] The container body 20 is configured to retain liquid. The container body 20 preferably includes a sidewall 21. The container body 20 preferably also includes a bottom wall 22. Feet 23 can extend downward from the bottom wall 22 to provide a base for contacting a surface (not shown) upon which the mop bucket 10 will rest. An opening 24 is provided at a top portion of the container body 20 to allow access to its interior. A handle 25 can be provided on the container body 20 to facilitate carrying of the mop bucket 10.

[0017] The pad storage area 30 is disposed within the container body 20. As shown in Figure 4, the flat mop pads 70 can be stored in the pad storage area 30.
[0018] The liquid storage area 40 also is disposed within the container body 20. The liquid storage area 40 is below the pad storage area 30 when the mop bucket 10 is in an upright position. Preferably the liquid storage area 40 is configured to maintain the liquid 80 separate from the pad storage area 30 when the mop bucket 10 is in an upright position. The pad storage area 30 and the liquid storage area 40 are in fluid communication, however, so that liquid from the liquid storage area 40 can be transferred to the pad storage area 30 when the container body 20 is at least partially inverted.

[0019] The liquid storage area 40 can include a plurality of upward projections 41 from the bottom wall 22. The upward projections 41 each preferably have a relatively large radii on their upper surface and are spaced from one another in such a manner as to facilitate cleaning. The height of the tops of the upward projections 41 is configured to be above the intended height of the liquid 80 that will be provided in the bucket 10. The upward projections 41 preferably have a height that is less than approximately one inch and more preferably is approximately 0.900 inches. As shown in Figure 4, the projections 41 inhibit the liquid 80 in the liquid storage area 40 from contacting the flat mop pads 70 in the pad storage area 30 when the mop bucket 10 is in the upright position. More specifically, the upward projections 41 maintain the stack of flat mop pads 70 at a height above the liquid in the liquid storage area 40.

[0020] The upward projections 41 can be in the form of ribs molded into the bottom wall 22. This makes the projections 41 an integral component of the container body 20 so that they will not be detached and lost. The projections 41, however, could be provided in the form of a separate molded plastic component (not shown) that is placed in the bottom of the container body 20.

[0021] The lid 50 (see Figures 2 and 5) is configured to form a substantially liquid-tight seal of the opening 24 at the top portion of the container body 20. A connecting mechanism 60 can be provided to affix the lid 50 to the container body 20. The connecting mechanism 60 can include openings 61 in the lid 50 and projections 62 from the container body 20. The projections 62 fit into the openings 61 to hold the lid 50 on the container body 20.
[0022] The mop bucket 10 can also include graduated projections 65 that extend above the bottom wall 22 and signify liquid fill levels. The projections 65 are arranged at a plurality of heights, which each indicate an amount of liquid 80 within the container body 20.

[0023] The present invention can be used to apply liquid 80 to a stack of flat mop pads 70 in an advantageous manner. Liquid 80 can be poured into the mop bucket 10 described above. The graduated projections 65 can be used to determine when the appropriate amount of liquid 80 has been provided. A stack of flat mop pads 70 can then be placed in the pad storage area 30 (see Figure 4). The lid 50 is then attached to the container body 20 via the connecting mechanism 60. The mop bucket 10 is at least partially inverted (see Figure 5) to distribute the liquid 80 into the pad storage area 30 for absorption by the stack of flat mop pads 70. Preferably the bucket 10 is fully inverted. The bucket 10 is then returned to an upright position, and liquid 80 that was not absorbed by the flat mop pads 70 will begin to drain downward due to gravity into the liquid storage area 40. The upward projections 41 maintain the stack of flat mop pads 70 at a height above the liquid 80 in the liquid storage area 40 so that, as liquid 80 drains to the bottom of the bucket 10, the lower pads 70 do not sit in a pool of liquid and become oversaturated. The lid 50 is then removed from the container body 20, and a mop frame (not shown) is attached to a first or topmost flat mop pad 70 in the stack of flat mop pads 70. After mopping the floor, the first flat mop pad can be removed from the mop frame and a second flat mop pad in the stack of flat mop pads can be attached to the mop frame for mopping in a different location.

[0024] Preferably a mop bucket 10 can be configured to permit saturation of all the flat mop pads 70 pads in the stack with a substantially equal amount of liquid. A mop bucket 10 thus can be configured that will not oversaturate the lowermost pads.

[0025] The disinfecting bucket 10 of the present invention can be used with many flat mop pads and flat mop pad supports. Preferably, it is used with a flat mop pad disclosed in a patent application that is to be concurrently filed by Judy Cline entitled “Color Coded Mop Pads and Method of Color Coding Same” (Serial No. _________; Attorney Docket Number 086554-1178), the entire contents of which
is hereby incorporated by reference. Preferably, the disinfecting bucket 10 is used with the flat mop pad support disclosed in a patent application that is to be concurrently filed by the present inventor entitled “Mop Having Ergonomic Handle and Joint” (Serial No. __________; Attorney Docket Number 086554-1179), the entire contents of which is hereby incorporated by reference.

[0026] It will be apparent to those skilled in the art that various modifications and variations can be made to the present invention without departing from the spirit and scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.
What is claimed is:

1. A method of applying liquid to a stack of flat mop pads, the method comprising the steps of:
   - providing a bucket having a container body, a lid for the container body, a liquid storage area within the container body, and a pad storage area within the container body, wherein the liquid storage area and the pad storage area are in fluid communication, and the liquid storage area is below the pad storage area when the bucket is in an upright position;
   - pouring liquid into at least the liquid storage area;
   - placing a stack of flat mop pads in the pad storage area;
   - attaching the lid to the container body containing the liquid and stack of pads to seal the container body;
   - at least partially inverting the bucket to distribute the liquid into the pad storage area for absorption by the stack of flat mop pads; and
   - removing the lid from the container body.

2. The method of claim 1, wherein the liquid is disinfectant.

3. The method of claim 1, further comprising the steps of:
   - attaching a mop frame to a first flat mop pad in the stack of flat mop pads; and
   - mopping a floor.

4. The method of claim 3, further comprising the steps of:
   - removing the first flat mop pad from the mop frame;
   - attaching the mop frame to a second flat mop pad in the stack of flat mop pads; and
   - mopping a floor.

5. A mop bucket for applying liquid to a stack of flat mop pads, the mop bucket comprising:
   - a container body with an opening at a top portion thereof;
   - a liquid storage area within the container body;
a pad storage area within the container body and in fluid communication with
the liquid storage area, wherein the liquid storage area is below the pad storage area
when the bucket is in an upright position; and
a lid configured to form a substantially liquid-tight seal of the opening of the
container body.
6. The mop bucket of claim 5, where in the liquid is disinfectant.
7. The mop bucket of claim 5, wherein the container body includes a bottom
wall, and the liquid storage area includes a plurality of upward projections from the
bottom wall.
8. The mop bucket of claim 7, wherein the heights of the upward projections are
configured to be above the height of the liquid.
9. The mop bucket of claim 5, wherein the container body includes a bottom wall
and graduated projections that extend above the bottom wall and that signify liquid
fill levels.
10. The mop bucket of claim 5, further comprising a connecting mechanism for
affixing the lid to the container body.
Fig. 4
Fig. 5
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 - A47L113/58

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47L B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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* Special categories of cited documents:
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Date of the actual completion of the International search: 8 July 2005
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Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 5282 HV Rijswijk
Tel. (+31-70) 340-2060, Tx 31 651 epo nl
Fax (+31-70) 340-2016

Authorized officer: D'Souza, J
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