Title of the Invention: A hand sanitiser
Abstract Title: Hand sanitizer with a remoter reservoir for use on a horizontal surface

The invention relates to a table mountable hand sanitizing apparatus comprising a table-surface mounted nozzle mechanism 1, connected to a remote reservoir 2 for housing liquid hand wash by means of a conduit 3. The release means may be manual i.e. a button or electronic such as a sensor. The reservoir may be adapted for connection beneath a surface, i.e. a table. The nozzle mechanism may be fixed to the table by a clamp means 7.

FIGURE 1
FIGURE 4
A HAND SANITISER

Field of the Invention

5 The present invention relates to hand sanitiser, more particularly a hand sanitiser for use on a horizontal surface.

Background

10 Personal hygiene and in particular transmission of germs is a major concern in society today and people are taking concerned steps to reduce chances of transmission and infection.

Studies suggest that hand washing is a primary step in reducing transmission of bacteria and where soap and water is available hand washing is a generally recommended course of action. However where such facilities are not available or may not be so convenient independent hand washes, wipes and/or alcohol gels may serve a similar purpose.

20 Hospitals and other locations under heightened sanitary conditions have antibacterial and antivirus gels for use in all doorways, where the dispensers are typically wall mounted. People can also purchase their own supply to carry around with them or to have in a home. Although practical even portable dispensers can be unsightly and unsuitable for display in some further locations.

25 Public places such as pubs and restaurants receive a number of guests each day and therefore transmission of harmful bacterium and viruses is like, as in other populated places such as schools and universities. Although toilet facilities are available for hand washing at these locations it may not always be practical or convenient to visit them in order to wash hands on regular occasions, for example every time a user coughs into a hand or sneezes, therefore readily available hand cleaning facilities are desirable.

35 Prior Art
Accordingly a number of patent applications have been filed in an attempt to resolve the problem or similar, including the following:

Granted United States patent US 7 293 738 (GREBONVAL et al) which discloses a freestanding dispenser for dual dispensing of a wet substrate and a dry substrate comprising: a base for supporting the freestanding dispenser on a substantially horizontal surface; a support member connected to the base, the support member adapted for holding a roll of a dry substrate in a substantially vertical position; and a source of a wet substrate supported by the freestanding dispenser.

Granted United States patent US 7 398 788 (DEHART) discloses a combination dining table with integral dishwasher, comprising: a) a support base having a top portion; b) a table structure providing a substantially horizontal dining surface fixedly mounted on said support base top portion and having an opening bounded by portions of said fixed dining surface; c) a dishwasher assembled within said support base and connected to appropriate utilities for operation thereof; d) a perforate chute mounted within said dishwasher and configured for receiving and holding a plurality of utensils, said chute extending angularly downward from an open upper end to a closed perforate lower end thereof; e) an openable access cover assembly comprising inner and outer access covers each of which is adapted to be positioned in either a storage position below the level of said dining surface and providing access to said dishwasher or in an enclosing position above selected portions of said dishwasher; f) said inner access cover being supported, independent of the support provided for said outer access cover, on a fixed portion of said table structure and in a manner which enables said inner access cover to pivot on a fixed axis between its respective said storage and enclosing positions; g) said outer access cover being supported, independent of the support provided for said inner access cover, at each of its ends by a lever arrangement suspended from a fixed portion of said table, and which enable said outer access cover to swing on said lever arrangement between its respective storage position in a first plane below said dining surface and its enclosing position in a second higher plane parallel to the first plane, and in which the upper surface of said outer access cover is flush with said dining surface; and h) said inner and outer access covers being configured to snugly fill said opening when each is in its respective said enclosing position and to permit respective adjoining edges of said inner and outer access covers to abut in a close fit join with no upstanding protrusions from the support provided for either said inner or outer access
covers so as to maintain the smoothness of said dining surface within the boundaries of said opening at said join when said inner and outer access covers are in their respective enclosing positions.

5 Granted United States patent US 6 378 537 (DEHART) discloses a combination dining table with integral dishwasher, comprising: (a) a support base having a top portion; (b) a substantially horizontal dining surface fixedly mounted on said top portion of said support base; (c) a dishwasher assembled within said support base and connected to appropriate utilities for operation thereof; (d) an openable access cover located proximate said dining surface and positionable in either a first storage position providing access to said dishwasher or in a second enclosing position above selected portions of said dishwasher; (e) a perforate chute mounted within said dishwasher and configured for receiving and holding a plurality of utensils, said chute extending angularly downward from an open upper end to a closed perforate lower end thereof; and (f) wherein said access cover when in said enclosing position is flush with said dining surface and when in said storage position is below said dining surface.

In contrast the present invention provides a means of maintaining sanitary conditions discreetly, effectively, providing novelty value and targeted availability.

Summary of the Invention

According to the present invention there is provided a table mountable hand sanitising apparatus having: a table-surface mounted nozzle mechanism, connected to a reservoir for housing liquid hand wash, a release means, and a delivery channel; wherein said nozzle mechanism delivers hand wash from the reservoir and said reservoir is situate remotely.

30 In preferred embodiments the apparatus is manually operable by a pumping means wherein force is applied to a lever, button or plunger so as to engage the pumping or release means, and use the nozzle mechanism to release a predetermined amount of hand wash into a hand of a user.

35 In some embodiments the pumping or release means may include electric provision, for example being connected to a portable or fixed electrical supply.
In preferred embodiments the reservoir may be concealed beneath the table-surface in use.

5 In some embodiments the release means may be activated by a sensor that detects the presence of a user's hands, triggering release of hand wash so as to avoid the user having to touch any part of the apparatus, improving hygiene by reducing chances of transmission of potentially harmful bacterium and viruses.

10 In yet further embodiments the dispenser may include a bulb that can be squeezed so as to release the hand wash. Some embodiments may include foot activation or elbow activation, for example wherein the release means may be remote from the nozzle mechanism.

15 Ideally the apparatus provides a nozzle mechanism having a rigid swan neck mounted on a base with a distal end wherein the nozzle is positioned at the distal end to direct the release to the user's hand and so as to provide an elevated position above the table-surface wherein the user can place a hand or hands under the nozzle without being restricted by the surface on which it is positioned.

20 In other embodiments the neck may constitute a straight or inverted J-shape with the nozzle at its distal end to the base and/or reservoir so as to allow the user to be able to place hands under the nozzle comfortably and without interference from the table-surface.

25 In all preferred embodiments the apparatus has a method of attachment to the table-surface. Preferably the apparatus includes a mechanical clamp, adhesive or anchoring that is joined to, integral to or shared with the base.

30 In preferred embodiments the reservoir is capable of being refilled repeatedly. Ideally refills are facilitated by a secondary and/or remote hand wash store, said store which has a channel through which the liquid can be passed from the store to the reservoir. Said store allows hand wash to be maintained within the apparatus for when the reservoir is displaced or removed.
Advantageously in some embodiments the clamp accepts the table-surface such as an edge of the table-surface or bar top and aftermarket embodiments may be adjusted to accommodate various depths or angles. This may be achieved by a screw thread wherein opening or space between the base and a clamp plate or table-surface can be adjusted to fit the table-surface.

In preferred embodiments the screw clamp may be a C-shaped portion attached, attachable to or included in the base which accepts the table-surface, wherein the clamp plate is a movable portion so as to be adjusted to depths of table and peculiarities of table-surface.

In other embodiments the nozzle mechanism may be attached to the surface by method of a magnet, magnetic portions or ferromagnetic portions, wherein one magnet is positioned on the base and the table-surface or underside of the table-surface. Advantageously said magnetics, magnetic or ferromagnetic portions may enable the nozzle mechanism to be positioned anywhere on the table rather than the edge only. Some further embodiments may be operable so as to be used on tablesurfaces formed of or including ferromagnetic material.

Typically the channel is in parts an elongate flexible tube comprised of synthetic plastic or rubber and said tube may be connected to or within the nozzle mechanism, release means and/or reservoir.

In some embodiments any visible lengths of the channel that are visible are transparent or translucent so that the hand wash is visible to the user flowing through the channel, and/or the tube can be observed to ascertain when empty and so as to be discrete to the user or third parties.

It is envisaged that in some embodiments length of the channel may be variable in order to accommodate different locations of the apparatus on various surfaces such as tables, shelves, sideboards and bar tops. For example in some embodiments the tube may be fitted to standard connectors and allow use of standard tubing and consequently variable lengths.
In all preferred embodiments the channel is fed by the remote reservoir wherein the remote reservoir serves as storage for the hand wash enabling the apparatus to be smaller, less obtrusive and more discrete.

Preferably the reservoir attaches to the underside of the table or is included in the table, so as to be discrete. In some embodiments the channel passes through the table-surface.

Advantageously the reservoir may be detached for refilling or maintenance purposes and/or in some embodiments filling may be facilitated at the nozzle mechanism or release means such as by reversal of pumping means.

Ideally the reservoir is hemispherical having a flat face to be mounted to the underside of the table-surface or table or bar top. Ideally the reservoir is mounted to the underside by reversible method of a screw fitting, detent mechanism, corresponding male and female parts, buttons or press-studs.

A hemispherical, or typically organic form ensures there are no sharp edges that the user may knock when for example sitting down at the table. Ideally the reservoir may include resiliently deformable sections to allow for expansion but is provided with a robust carapace or exterior to prevent spillages.

Preferably the reservoir is available in various shapes and sizes so as to best fit the surface or table to which the reservoir and channel are attached.

It is envisaged that the base may additionally hold a smaller reservoir or store of hand wash within it.

In preferred embodiments the channel enters the nozzle mechanism through the underside of the base. It is envisaged that the channel is mounted or embedded in the clamp so as to discreetly traverse the surface in order to pass along the underside of the surface between the reservoir and store, nozzle mechanism or release means. In some embodiments the underside of the surface may include a groove, indentation, raised and lowered areas or a hollow along which the channel may pass along or through so as to not be visible.
Alternatively and particularly in aftermarket embodiments the channel may be held in position by hooks or clips to prevent in dangling below the surface and interfering with the user or third parties.

In other embodiments where the dispenser is positioned away from the edge of the surface a hole may be made to receive the channel allowing it to traverse the surface in order to be connected to the reservoir. In some embodiments the dispenser may be centrally situated in a table, and the reservoir attached to the table underside directly below the dispenser.

It is envisaged that the channel is removably attached to the dispenser and the reservoir so that it may be easily detached for cleaning and so as to allow the easy refilling of the reservoir. Ideally therefore the channel may connect to the dispenser or reservoir by a valve, push fitting, clamp or screw mechanism.

**Brief Description of Figures**

Figure 1 shows a side view of a preferred embodiment of the apparatus;

Figure 2 shows an isometric view of the embodiment of Figure 1 missing the reservoir;

Figure 3 shows a transparent side view of the embodiment of Figure 1;

Figure 4 shows a view from below of the embodiment of Figure 1;

Figure 5 shows a transparent side view of the embodiment of Figure 2;

Figures 6 show rear and front views of the embodiment of Figure 2;

and

Figures 7 show views from below and above of the embodiment of Figure 2.
Detailed Description of Figures

The pictured embodiment provides a dispenser for anti-bacterial cleansing gel mounted in use to a table in a restaurant to make it easier and more convenient for customers to clean hands prior to consuming food, particularly for use with finger foods.

The embodiment includes the following:

10 Nozzle mechanism 1
Reservoir 2
Clear polyvinyl chloride channel 3
15 Transparent reservoir rigid top casing 4
Dispensing button 5
20 Reservoir bottom casing 6
Table clamp 7

The hand sanitising gel reservoir is easily replenished by un-clipping the transparent rigid casing underneath the table, taking out a used bag of gel, and sloting in a fresh bag, clipping the fascia back.

The nozzle mechanism slides over one edge of the table and clamps into place where the screw clamp can be tightened by hand.

25 Behind the screw clamp there are two thin, flexible PVC tubes. Both lead to the gel storage bag located under the table. One tube carries air to the reservoir under the table; the other tube carries gel from the reservoir to the nozzle mechanism.

30 One tube helps to create a vacuum effect causing the gel to be forced out the reservoir, through the second tube, and up in the nozzle mechanism.
To dispense gel, the user slides back a failsafe cover and compresses the pumping means button. By pressing the button with a repetitive pumping action, gel is drawn from the reservoir up and out through the nozzle mechanism.

The invention has been described by way of examples only and it will be appreciated that variation may be made to the above-mentioned embodiments without departing from the scope of invention.

With respect to the above description then, it is to be realised that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.
Claims

1. A hand sanitising apparatus having: a first portion, adapted to be mounted on a surface, including an orifice for dispensing liquid hand wash, and a reservoir for containing liquid hand wash, wherein said first portion is located remotely from said reservoir and connected thereto by a conduit.

2. An apparatus according to claim 1 including manually operable release means.

3. An apparatus according to claims 1 or 2 wherein the release means is electrically powered.

4. An apparatus according to claims 1, 2 or 3 wherein the reservoir has means to connect beneath a surface.

5. An apparatus according to any of claims 1 to 4 wherein the release means is activated by a sensor that detects the presence of a user’s hands under the orifice.

6. An apparatus according to any of the preceding claims wherein the orifice is located at the end of a rigid swan neck shaped pipe.

7. An apparatus according to any of the preceding claims wherein refills are facilitated by a secondary hand wash store.

8. A system of providing hand cleansing facilities at a table according to any of the preceding claims or with reference to the figures.
Amended claims have been filed as follows:-

**Claims**

1. A table mountable hand sanitising apparatus comprising:
   a first portion comprising an attachment means for attaching the first portion to a table, in which the first portion includes an orifice for dispensing liquid hand wash; and
   a reservoir for containing liquid hand wash, wherein said first portion is located remotely from said reservoir and connected thereto by a conduit.

2. An apparatus as claimed in claim 1, in which the attachment means comprises one or more of: a mechanical clamp, adhesive, anchoring, magnet, magnetic portions and/or ferromagnetic portions.

3. An apparatus as claimed in claim 2, in which the attachment means comprises a screw clamp.

4. An apparatus as claimed in claim 3, in which the screw clamp comprises a C-shaped portion.

5. An apparatus as claimed in any one of claims 1 to 3, in which the reservoir is arranged to be detatchably connected to the apparatus.

6. An apparatus as claimed in claim 5, in which the reservoir comprises one or more of: a screw fitting, detent mechanism, corresponding male and female parts, buttons and/or press-studs to detachably engage corresponding attachment features of the table.

7. An apparatus as claimed in any preceding claim, in which the reservoir is arranged in use to be attached to the underside of the table or to be included in the table.

8. An apparatus as claimed in claim 7, in which the reservoir comprises a substantially flat surface arranged in use to be mounted adjacent to the underside of the surface of the table.

9. An apparatus as claimed in claim 8, in which the reservoir is substantially hemispherical in shape.

10. An apparatus as claimed in any preceding claim in which the conduit is arranged in use to pass through the surface of the table.

11. An apparatus as claimed in any preceding claim, in which the first portion comprises a base for mounting on the table, and in which the conduit enters the first portion through the underside of the base.

12. An apparatus as claimed in any preceding claim in which the conduit is removably attached to the first portion and the reservoir.
13. An apparatus according to any preceding claim wherein the release means is activated by a sensor that detects the presence of a user's hands under the orifice.

14. An apparatus according to any of the preceding claims wherein the orifice is located at the end of a rigid swan neck shaped pipe.

15. A system of providing hand cleansing facilities at a table comprising an apparatus as claimed in any preceding claim, and a table.
**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Relevant to claims</th>
<th>Identity of document and passage or figure of particular relevance</th>
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| X        | 1, 3, 4, 5, 6, 7  | EP2124693 A2  
(MISCEA GMBH) see whole document especially the figures noting remote reservoirs 11, 12, 13 orifice shown generally as item 60 and conduits 51, 52, 53. |
| X        | 1, 3, 4, 5, 6, 7  | GB2416159 A  
(GOTOHTI COM INC) see whole document, especially the figures noting remote reservoir 24, orifice 42 and conduit 29. |
| X        | 1, 3, 4, 5, 7     | EP0533983 A1  
(TOTO LTD) see whole document especially the figures noting first portion 6, remote reservoir 1 and conduit 3. |
| X        | 1, 2, 4, 6, 7     | US2007/108230 A1  
(DOYLE LINDSAY) see whole document especially the figures noting remote reservoirs 14, orifices shown generally as 24 and conduits 16. |
| X        | 1, 2, 4, 6, 7     | US5988451 A  
(HANNA EMMANUEL A) see whole document especially the figures noting reservoir 16, orifice shown generally as item 15 figure 1 and conduit 18. |
| X        | 1, 3, 5, 6, 7     | US5299713 A  
(SAITOH SHIRO) see whole document especially the figures noting reservoir 9, orifices shown generally as items 2, 3 & 4 and conduit 8. |
| X        | 1, 2, 6, 7        | US6390340 B1  
(LYNCH SR DANIEL) see whole document especially the figures noting remote reservoir 14, orifice 26 and conduit 24. |
| X        | 1, 2, 4, 7        | US2011/132931 A1  
(WRIGHT SHELLEY LYNN) see whole document especially the figures noting remote reservoir 304 and orifice 116. |
| A        | None              | US2011/155766 A1  
(HURLEY TIMOTHY R) |
Categories:

| X  | Document indicating lack of novelty or inventive step |
| Y  | Document indicating lack of inventive step if combined with one or more other documents of same category. |
| &  | Member of the same patent family |
| A  | Document indicating technological background and/or state of the art. |
| P  | Document published on or after the declared priority date but before the filing date of this invention. |
| E  | Patent document published on or after, but with priority date earlier than, the filing date of this application. |

Field of Search:
Search of GB, EP, WO & US patent documents classified in the following areas of the UKC:

Worldwide search of patent documents classified in the following areas of the IPC:
A47K

The following online and other databases have been used in the preparation of this search report:
EPODOC, WPI

International Classification:

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