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(58) Field of search
UK CL (Edition K) **F1W** WCL WDP
INT CL[5] **F04B**

(54) Liquid dispenser with collar to prevent operation at certain orientations of delivery tube

(57) A liquid dispenser for mounting through an aperture in a sink has a pump (13) an actuator button (14) and a delivery tube in communication with the pump, the actuator being surrounded by a collar (22) which has a raised section (24) and a lower section (26). When the delivery tube (18) is aligned with the lower section, the actuator button (14) is movable freely to operate the pump (13). However, if the actuator button (14) is rotated so that the delivery tube is aligned with the raised section (24) of the collar, any attempt to move the actuator button (14) to actuate the pump (13) will be prevented by abutment of the delivery tube (18) and the raised section (24). The transition between the raised (24) and lowered (26) sections of the collar (22) may be a stepped transition or a gradual transition. The dispenser may be associated with a liquid reservoir (15) which may be removable.

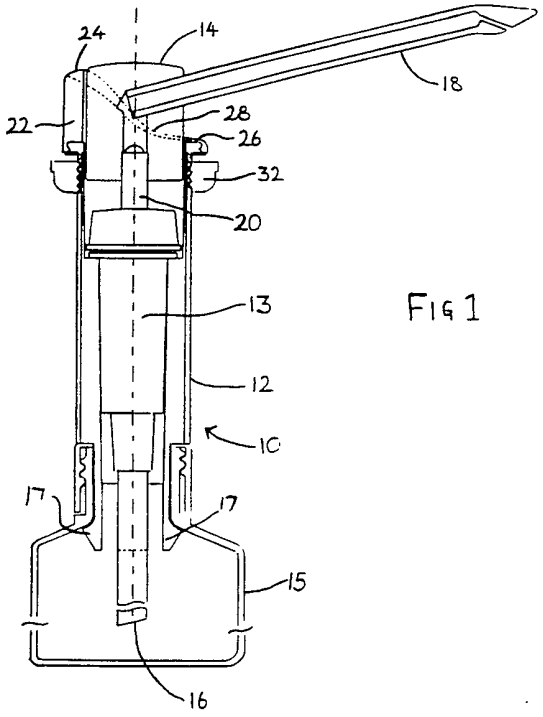

Fig 1

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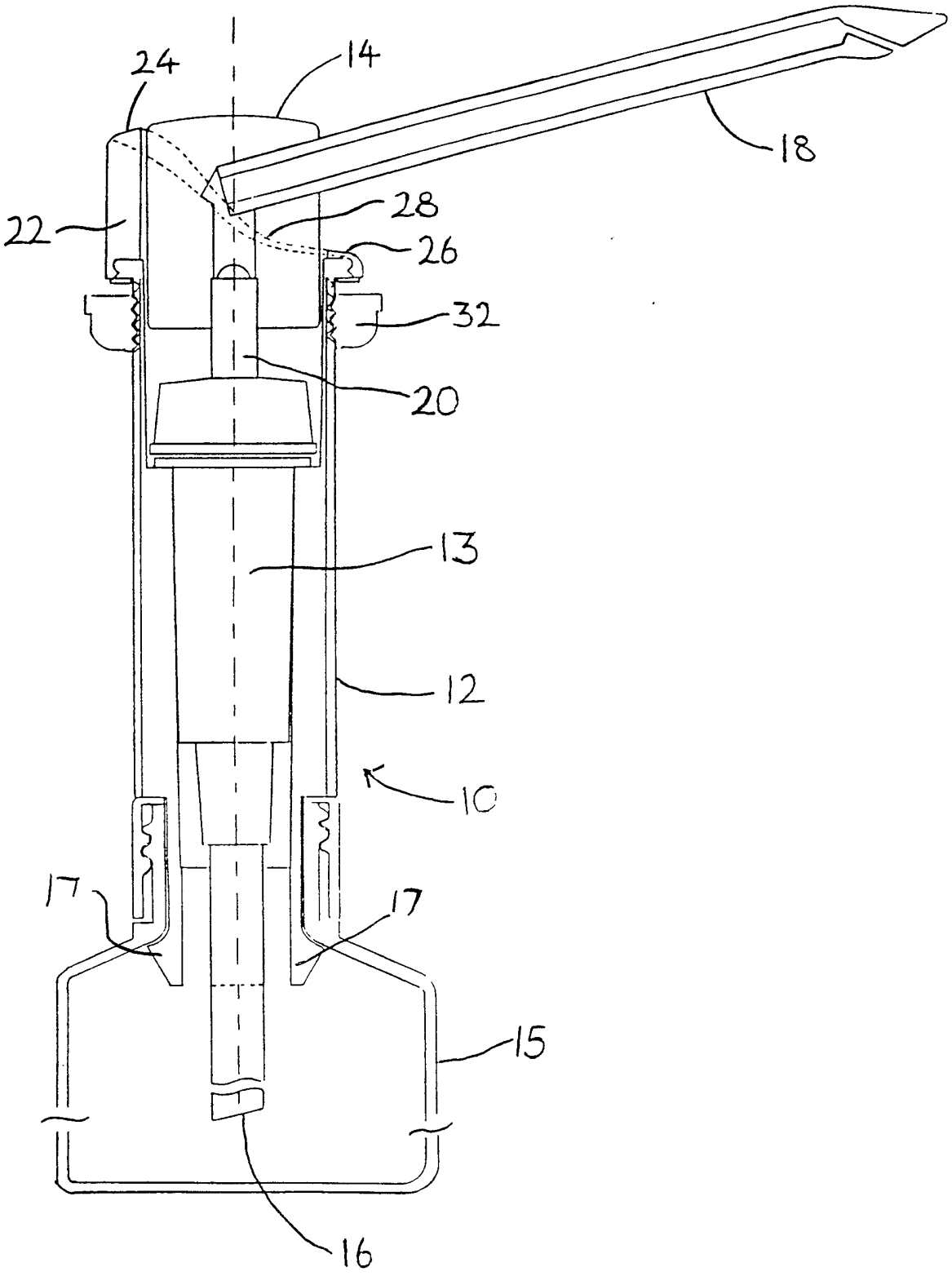

FIG 1

FIG 2

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DISPENSER

The present invention relates to a dispenser for e.g. liquid such as a liquid soap.

There is a known type of dispenser, commonly used to dispense liquid soap, which is designed to be mounted through an aperture cut in a sink specifically for that purpose. Typically, the aperture would be positioned adjacent the aperture(s) through which the tap(s) are mounted. The dispenser has a base portion, which extends through the aperture, and contains a pump mechanism. An operating button is mounted on the top of the base, the pump being operated by the depression of the button. A delivery tube is provided fast with the operating button, to deliver the pumped liquid to a convenient position, the delivery tube being rotatable about the base through 360 degrees.

The disadvantage with this type of dispenser is that few sinks are provided with a suitable mounting aperture. It is however, not uncommon for sinks to be provided with an extra aperture, on the opposite side of the sink bowl to the taps, as this allows one sink to be used in either left or right-handed configuration. Normally this extra aperture is un-used and is filled by a blanking piece. However, this aperture could be used for mounting a liquid dispenser a suitable configuration. However, the known type of dispenser is not suited to mounting in this position. Firstly, the dispenser typically projects a

considerable distance above the surface of the sink which renders it liable to damage by large or heavy objects being lifted into the sink. Secondly, because this type of dispenser has a delivery tube which may be rotated to a position wherein it extends outside the edge of the sink, there is a risk if the dispenser is operated while in this position, that liquid will be dispensed onto the floor causing it to become slippery with a consequent risk to people walking past. This situation is likely to occur in a domestic environment where children are present as they are likely to interfere with the dispenser.

The present invention seeks to provide a dispenser which is suitable for mounting at the front of a sink. In the present invention, the operating button is surrounded by a collar which has a raised and a lower part arranged so as to permit the operating button to be depressed when the delivery tube is over the lower section and so as to prevent or restrict the button from being depressed, and the pump being operated, when the delivery tube is over the raised section. Preferably, the collar will be arranged such that operation is only permitted when the delivery tube is in a safe position e.g. over the sink. Preferably the top edge of the raised part is approximately level with the top of the button.

At its simplest, the transition from the lower part to the raised part may be a step, in which case, the step will limit the rotation of the delivery tube. Preferably, however, the transition is gradual. This is aesthetically

better, but also when the delivery tube passes over this gradual transition, it and hence the button, will be lifted gradually, and this will have the effect of rendering the pump inoperative, and prevent the delivery tube from receiving a harsh knock as it engages the collar.

The raised part may also prevent objects that are being lifted into the sink from damaging the operating button, the internal pump mechanism and associated components.

It is, of course, desirable that the button projects a relatively small distance above the surface of the sink or other surface in which the dispenser is mounted but the button must have the necessary depression distance for satisfactory pumping.

It is also preferable that the lower part of the collar permits at least some (i.e. non trivial) rotation of the delivery tube, so that the liquid to be dispensed may be suitably and variably directed.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings wherein:

Figure 1 shows a dispenser according to the present invention in a partly sectional view.

Figure 2 shows a dispenser according to the present invention mounted on a sink.

Referring first to Figure 1, a dispenser 10 has a body 12 wherein is mounted a pump 13. The pump 13 is operated by pressing and releasing an operating button 14 which

projects from the top of the body 12. The pump 13 draws liquid from a reservoir 15, through a collecting pipe 16. The reservoir is connected to the body 12 by means of "spacing fingers" 17 which form the bottom of the body 12. The liquid passes through the body of the pump 13 to a delivery tube 18 which projects from the side of the operating button 14. The operating button 14 is connected to the pump 13 by a spindle 20 which is rotatable with respect to the pump body 12 thereby allowing the operating button 14 to rotate so that the position of the delivery tube 18 may be adjusted. A collar 22 is fixed to the upper part of the body 12, surrounding the operating button 14. The collar 22 has a high portion 24 and a low portion 26, the upper edge of respective portions being arranged to be above and below the level at which the delivery tube 18 projects from the button 14 in its un-depressed position (the button being biased to that position). Two sloping portions 28 connect the high and low portions giving the collar 22 a continuous upper profile. While the delivery tube 18 is in a position above the low portion 26 of the collar 22, the button 14 may be freely depressed in order to pump liquid. If the delivery tube 18 is rotated then the delivery tube 18 engages the collar 22 so that the button 14 is prevented from being depressed so that liquid may not be dispensed. Further rotation of the delivery tube 14 will cause the tube 14 to be forced upwards by the sloping portion 28 of the collar 22, causing the button 14 and attached pieces of the pump 13 to be withdrawn from the

housing 12 and so disable the pump. A nut 32 is provided in threaded engagement with the body, just below the collar 22.

Figure 2 shows the dispenser 10 mounted through a flat portion of a sink 30. Only the button 14, collar 22 and the delivery tube 18 project above the level of the surface of the sink 30. The lower surface of the collar 22 forms a flat flange which abuts the surface of the sink 30. The threaded nut 32 is urged upwards such that the edges of the aperture are clamped between the nut 32 and the collar 22 in order to clamp the dispenser in position.

CLAIMS

1. A dispenser for liquid having a pump, a movable actuator for actuating the pump, a delivery tube mounted on the actuator for dispensing liquid therethrough on actuation of the pump, and a collar surrounding the actuator between the pump and the delivery tube, the collar having a first part which extends further from the pump than a second part and the actuator being rotatable in the collar so as to permit the actuator to be moved to actuate the pump when the delivery tube is aligned with the second part of the collar and to prevent or restrict the movement of the actuator when the delivery tube is aligned with the first part of the collar by abutment of the delivery tube with the first part of the collar.

2. A dispenser according to claim 1, wherein there is a step transition between the first and second parts of the collar.

3. A dispenser according to claim 1, wherein there is a gradual transition between the first and second parts of the collar.

4. A dispenser according to any one of the preceding claims, wherein alignment of the delivery tube with the first part of the collar causes movement of the actuator in the opposite direction to the direction of actuation so as to disable the pump.

5. A dispenser according to any one of the preceding claims, wherein the actuator is biased to a rest position and the first part of the collar is substantially aligned

with the adjacent part of the free end of the actuator when the actuator is in its rest position.

6. A dispenser substantially as any one herein described with reference to and as illustrated in the accompanying drawings.

7. A sink unit having a dispenser according to any one of the preceding claims mounted in an aperture thereof.

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