PATENTS EXAMINATION BOARD

Subject: The Drafting of Patent Specifications - Paper 2

Date: 23 November 2015

Time: 09h00 -13h00 (although candidates requiring extra time are entitled to an additional two hours)

Examiners: J Fiandeiro
V Williams

Moderator: J D Whittaker

Attached is an instruction from your client detailing an invention.

You are required to draft a full patent specification for your client's invention. The full patent specification must include: (1) a background to the invention, (2) a summary of the invention, i.e. consistory clauses, (3) a brief description of the drawings, (4) a detailed description of the invention, (5) a set of patent claims, and (6) an abstract.

Marks will be allocated as follows:

- 50% of the marks will be allocated to the claims.
- 50% of the marks will be allocated to the rest of the specification.

In order to obtain a pass for this paper, candidates must obtain not less than 40% for each of these two sections.

Your client writes:

"As you may be aware, the introduction of drugs into a beverage without the knowledge of the individual drinking the beverage is a serious problem. I have therefore developed a device for a beverage bottle to address this problem, which I will now describe with reference to the attached drawings.

My device 10 locates within the neck 12 of a beverage bottle 14 in order to prevent the introduction of drugs into the bottle 14. The device 10 comprises a spherical stopper 16 which is freely rotatable within a support collar 18. The collar has an inside face 19 that is shaped to generally match the shape of the outer surface of the stopper 16. In this way, the collar 18 is able to retain the stopper 16 while still allowing free rotation of the stopper.

The stopper 16 is provided with a diametrical, cylindrical passage or bore 20 that extends the whole way through the centre of the stopper. The bore 20 terminates at the stopper surface in a first end 22 and a second end 24 respectively.

The stopper 16 may be rotated relative to the collar 18 between an open condition, in which each end 22 and 24 of the bore 20 is exposed on a respective side of the collar 18 (as illustrated in Figure 2), and a closed condition in which the ends 22 and 24 are concealed by the collar 18 (as illustrated in Figure 3). In the open condition, liquid may flow through the bore 20 from one side of the collar 18 to the other, while in the closed condition liquid is prevented from entering the bore 20 from either side of the collar 18. Hence, the device 10 allows liquid to flow out of the bottle 14 through the bore 20 in the open condition, thereby allowing consumption of the beverage, but prevents the flow of liquid out of the bottle, or the introduction of objects or substances into the bottle, when in the closed condition.

In order for the device 10 to perform its intended function, the bore 20 is arranged to permit the flow of fluid therethrough when the bottle 14 is tilted into a pouring or drinking position, and to prevent access to the interior of

the bottle 14 when the bottle is in a substantially vertical orientation, for example when the bottle is left standing on a table unattended and is most vulnerable to tampering.

The device 10 is fitted to the bottle 14 such that the axis of rotation of the stopper 16 is generally horizontally disposed when the container is upright, and the centre of gravity of the stopper 16 is positioned below the axis. In the attached drawings, the stopper 16 is seen to be mounted to the collar 18 via an axle 26 which, when the bottle 14 is standing upright (as in Figure 3) is substantially horizontally disposed. The stopper 16 also includes a weight 28 that is displaced from the axle 26. Hence, when the bottle 14 is upright, the stopper 16 adopts and maintains, under the influence of gravity, the orientation of Figure 3 in which the weight 28 assumes a position beneath the axle 26.

When displacing the bottle 14 from the upright condition of Figure 3 to a drinking condition, the resting orientation of the stopper 16 is substantially unchanged (due to the weight 28), while the collar 18 moves around the stopper 16 to expose the first end 22 and the second end 24 of the bore 20.

In order to limit the rotation of the stopper 16 relative to the collar 18, a stop 30 on the stopper 16 is arranged to abut against the underside of the collar 18 when the bottle 14 is tilted beyond a predetermined angle.

In addition, although the gap between the stopper 16 and the collar 18 is minimal, there is a possibility that liquid introduced into the neck 12 of the bottle 14 above the device 10 could slowly seep between the stopper 16 and the collar 18 and mix with the contents of the bottle 14. To avoid this, the device 10 is provided with an annular seal 32 which projects from the collar 18 onto the stopper 16.

Both the stopper 16 and the collar 18 are formed from plastic. The weight 28 may be formed from a plastic having a greater density than the

remainder of the stopper 16, thus providing the bottom-heavy characteristic described above.

The device 10 may be secured within the neck 12 of the bottle 14 in different ways. For example, the interior of the neck 12 may be threaded, and the outer surface of the collar 18 may carry a corresponding thread, or the neck 12 may flare or taper outwardly towards the free end thereof, and the outer surface of the collar 18 may have a corresponding taper to achieve a taper lock within the neck 12.

I am aware that a ball valve has a similar structure to my device in that it uses a ball having a through bore to control the flow of fluid through the valve. However, with a ball valve, an external lever is required to manually displace the ball between a closed condition and an open condition. My device, on the other hand, does not require such a lever because the stopper 16 moves automatically between the open condition and the closed condition in use.

Please prepare a patent specification for my invention."

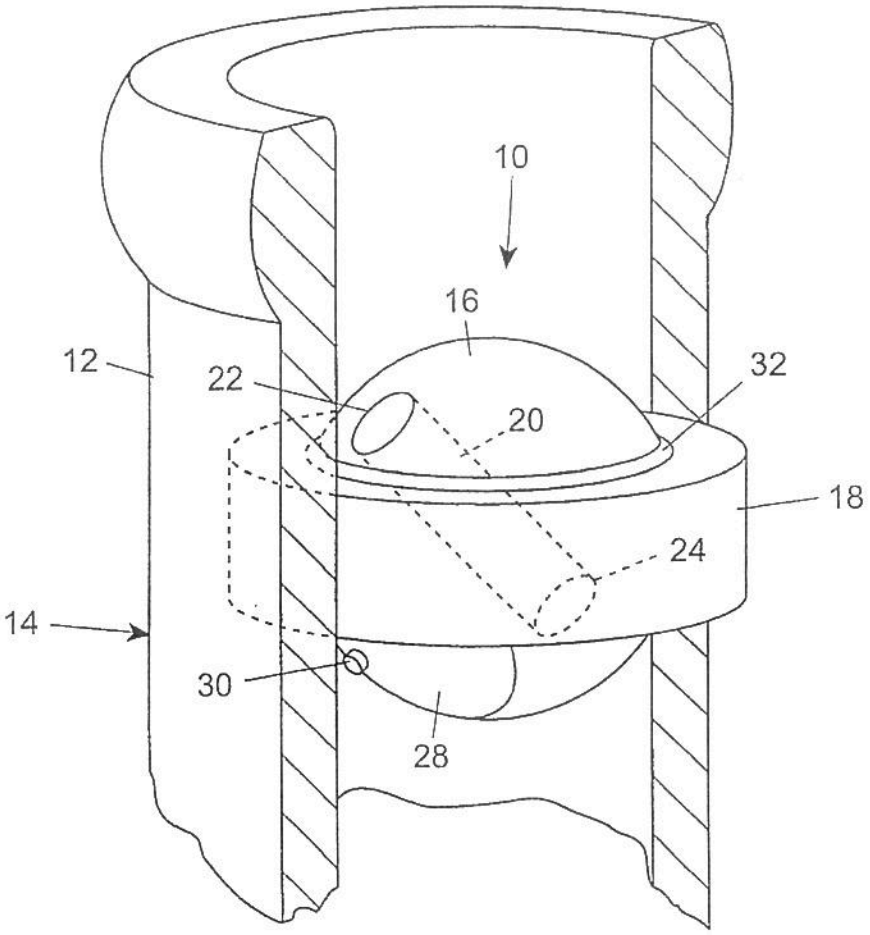

Fig. 1

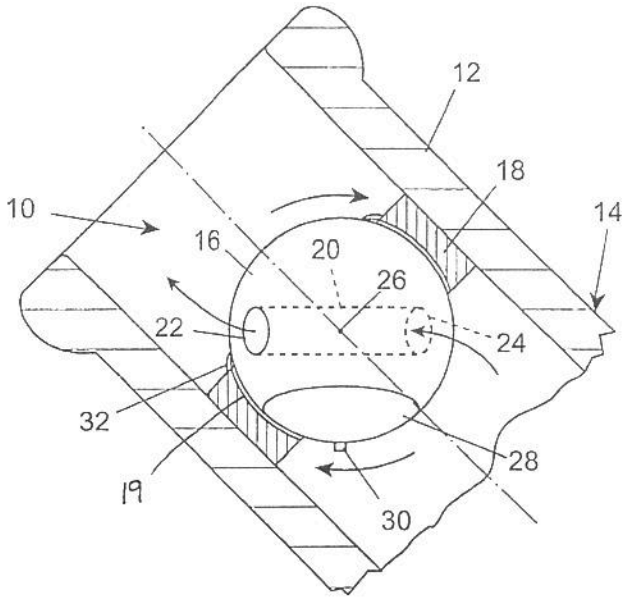
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Fig. 2

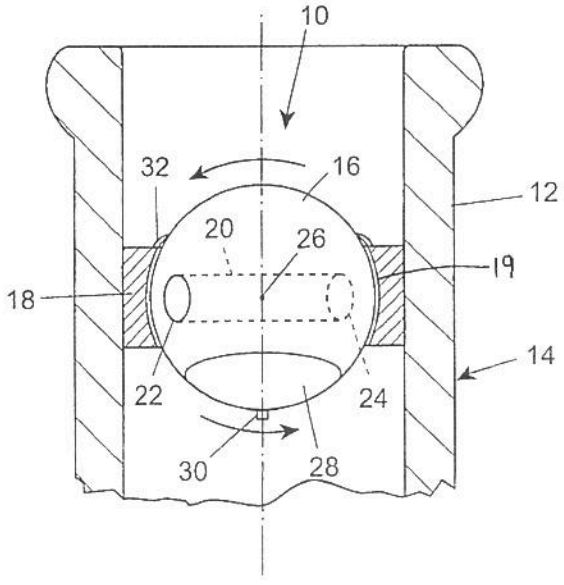
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Fig. 3