

PATENTS EXAMINATION BOARD

Subject: The Drafting of Patent Specifications – Supplementary Paper 2

Date: October 2019

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

Examiners: L Cilliers  
V Williams

Moderator: J D Whittaker

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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 brief description of the drawings, (3) a detailed description of the invention, (4) a set of patent claims, and (5) an abstract. **No summary of the invention (consistories) is required.**

**The paper includes a single set of drawings. Please number the drawings, and hand in with the specification.**

Your client writes:

“As a lover of handcrafted gin, I frequently find myself in need of ice cubes.

As you know, homemade ice cubes are typically made in ice trays, which are common in freezers all over the world. A conventional ice tray is usually in the form of a receptacle made from a somewhat resilient or flexible plastic material, with dividers or spacers (defining cube formation pockets) provided in the receptacle. These dividers or spacers are integrally formed with the receptacle. In use, the receptacle is filled with water, and once the water is frozen the tray is inverted in order for the ice cubes to be manually dislodged.

Although ice trays have not really changed since the advent of mechanical refrigeration, I have experienced a number of frustrations while operating these innocent looking devices. A major irritation is that the ice cubes often remain stuck in the cube formation pockets, and are difficult to dislodge even when the tray is manually flexed. When this occurs, it is sometimes necessary to hit the ice tray against a hard surface to assist in the dislodgement of the cubes. Another problem is that the conventional ice trays take up a lot of space, as they are not configured to be stackable on top of one another while the water is still in a liquid state. It furthermore also takes a steady hand to carry the filled ice tray from the tap to the fridge, and water is often spilled on the floor during this process, in particular after a few glasses of gin have been consumed.

One day I was watching my son making a homemade popsicle. He was using a device similar to that shown in Figure 1. This device includes a receptacle for receiving a liquid to be frozen, and a cap configured to cover an open end of the receptacle once filled. A popsicle stem extends from the cap into the receptacle, and the liquid will accordingly freeze around the stem. Holes are provided in the stem to ensure that the frozen liquid sticks to the stem and does not become dislodged when the popsicle is consumed. This nifty little device made me rethink the way we make ice at home...

My new device, which is going to revolutionize the art of ice making, is shown in Figures 2 to 5.

The device includes two sections – a spine and a tube. The spine is removably locatable inside the tube.

In this example the tube is made from a substantially rigid, transparent material. The tube is preferably square in cross-section, but I suppose many different shapes could be used. A filling line is indicated on the tube, and indicates the level to which the tube should in use be filled, thus taking into account the volume of the spine, and taking the guesswork out of the process.

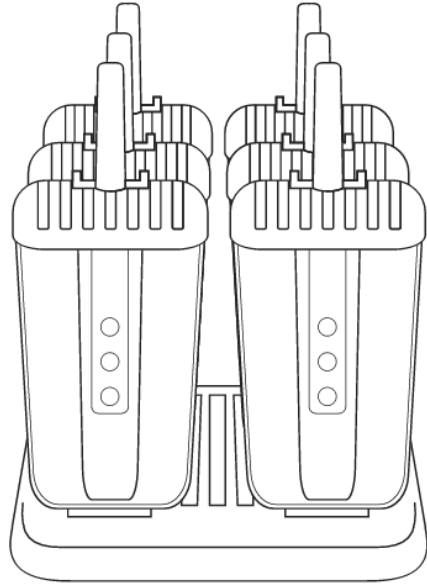
The spine is configured and dimensioned to fit inside the tube. The spine may be made from a rigid material, but may also be at least partially flexible to facilitate ease of dislodgement of ice cubes. In fact, the partially flexible option may well be my first choice. It will be beneficial for the spine to be made from a smooth, low friction material, such as Teflon or some other low friction polymer. Even if the spine is rigid, I believe that the fact that the entire spine (with the ice cubes formed thereon) is removable from the tube, will make it easier to dislodge the ice cubes.

The spine comprises an elongate stem, one end of which terminates in a handle formation. A sealing arrangement is provided adjacent the handle formation, and may take the form of an O-ring, but may also be defined by a surface of the stem that forms a friction fit with an inner surface of the tube. A plurality of flanges extend from the stem and, together with the tube, define cube pockets. The flanges may extend substantially perpendicularly from the stem (as shown in Figures 2 to 4), but may also be somewhat diagonal, as shown in Figure 5. There is provided for opposing flanges to extend from opposing sides of the stem or from one side of the stem only. When installed, the stem may therefore be located in the middle of the tube, or may be disposed towards one of the sidewalls of the tube.

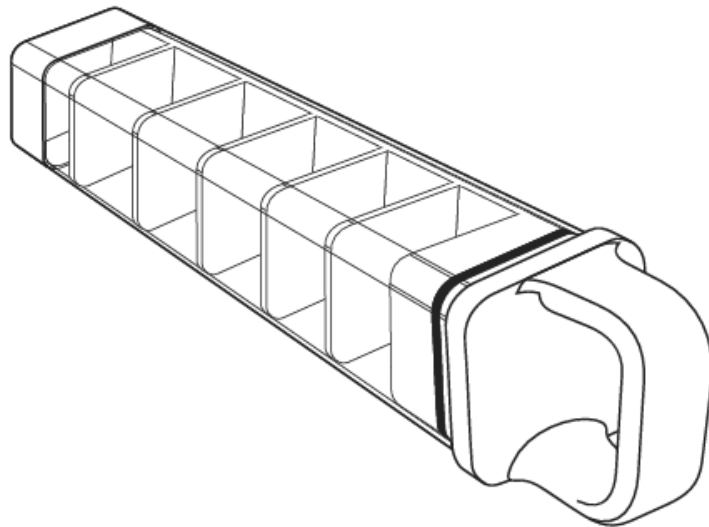
In use, the spine is removed from the tube, and the tube is filled with water up to the filling line. The spine is then inserted into the tube while the tube is held in a vertical position, until the spine and the tube is sealed. The device can now be put in the freezer (in any orientation). Once the water has frozen and the spine is pulled from the tube, an exposed ice cube will slide from the spine. If the cube does not automatically slide from the spine, the spine can be slightly flexed to assist in this action. It will be appreciated that a single cube of ice can be dispensed at a time, but that the entire batch of ice cubes can be dispensed by removing the spine from the tube altogether.

Please prepare a patent specification for my invention. “

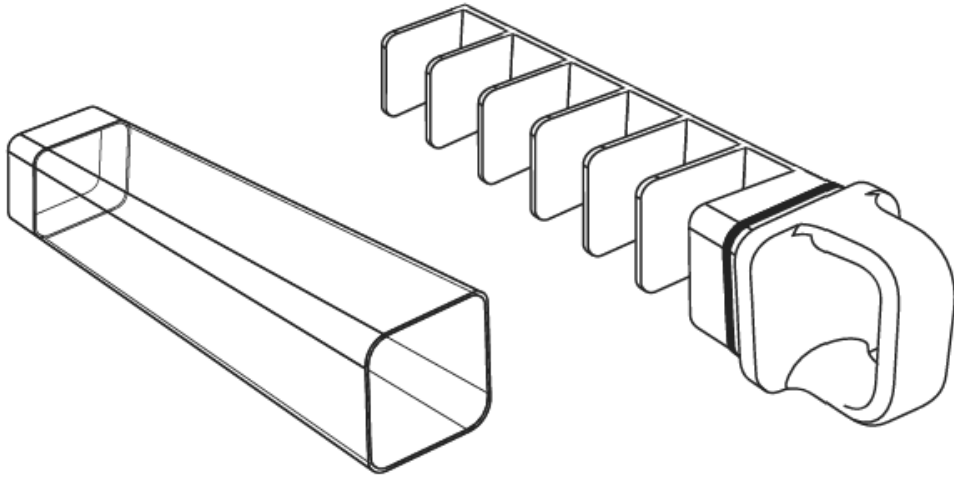
**Figure 1 – Prior Art**



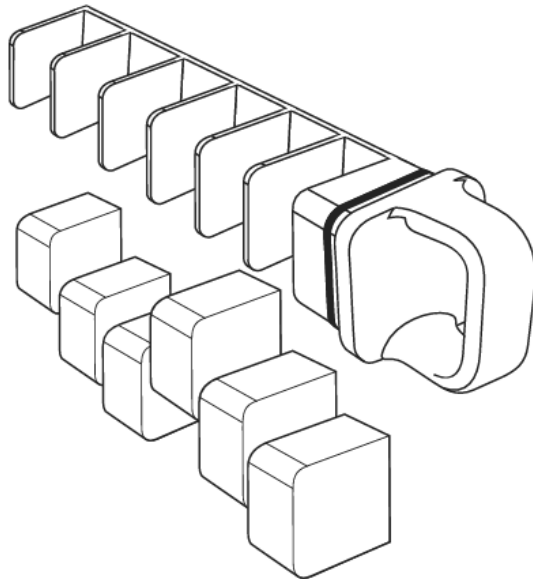
**FIGURE 2**



**FIGURE 3**



**FIGURE 4**



**FIGURE 5**

