

**THE JOINT EXAMINATION BOARD**

**PAPER P3 – Preparation of Specifications for United Kingdom Patents**

**Thursday 8<sup>th</sup> November 2012**

**10.00 a.m. – 2.00 p.m.**

*Please read the following instructions carefully. **Time Allowed – FOUR HOURS***

1. The whole question is to be attempted.
2. Marks to be awarded are given at the end of the question.
3. Please note the following:
  - a. Enter the Paper Number (P3) and your Examination number in the appropriate boxes at the top of each sheet of paper;
  - b. The scripts are photocopied for marking purposes. Please write with a **dark inked pen** on one side of the paper only and within the printed margins, and do not use highlighters in your answer;
  - c. Do not state your name anywhere in the answers;
  - d. Write clearly, examiners cannot award marks to scripts that cannot be read;
  - e. You must number all the pages of your answer script. Once the exam finishes, an additional 5 minutes will be allowed for you to do this.
4. Under the Examination Regulations **you may be disqualified from the examination and have other disciplinary measures taken against you if:**
  - a. you are found with unauthorised printed matter or other unauthorised material in the examination room;
  - b. your mobile phone is found to be switched on;
  - c. you copy the work of another candidate, use an electronic aid, or communicate with another candidate or with anyone outside the examination;
  - d. you continue to write after being told to stop writing by the invigilator(s). **NO WRITING OF ANY KIND IS PERMITTED AFTER THE TIME ALLOTTED TO THIS PAPER HAS EXPIRED.**
5. **At the end of the examination assemble your answer sheets in question number order and put them in the WHITE envelope provided.** Do not staple or join your answer sheets together in any way. Any answer script taken out of the examination room will not be marked.
6. This paper consists of 9 pages, including this page, and comprises 2 pages of the question, 3 pages of client's drawings and a further set of the drawings for use in your answer.

*In this question you are asked to draft a specification for filing at the UK Intellectual Property Office with a view to obtaining a UK patent. You should assume that the client's description of the prior art in the field is complete. You should not take into account any other prior art in the field which might be known to you. You should also assume that the client's description of the device and its operation is accurate, i.e. that the device works as described. The allocation of marks is given at the end of the question.*

Hi Pat

### **Medicine Bottles**

I'm sure you are familiar with our safety closure we use on bleach bottles. The important thing about safety caps is that they must be easy to close, but difficult for children to open. I've attached a sketch. The cap is a one piece, plastic moulding, with the upper part forming the normal screw threaded closure which engages with the screw thread on the bottle neck. The lower part, the skirt, has teeth which form a ratchet like lock with ramps on the neck of the bottle, below the thread. To close the bottle, the cap is screwed on in the normal way, and the teeth on the inside of the cap easily ride over the ramps as the cap is screwed home, locking the cap closed. To uncap the bottle, you have to squeeze the cap skirt in between the location of the teeth. This deforms the cap skirt into an oval, so the teeth will pass back over the ramps as the cap is unscrewed.

Bleach is a commodity market, and profit margins are low. We have been trying to get into the medicine market, where we think there are more opportunities and where it is also necessary to provide a safety cap to prevent children inadvertently accessing the bottle contents. In testing, we discovered that it is difficult for many elderly people to squeeze a cap and twist it at the same time (a problem we need to solve in the bleach market as well, I suppose) when they need to access their medicine. Also, they can get quite frustrated when the cap will not open, so end up just gripping hard and trying to force the cap round.

Anyway, we've solved this by using a two part cap. The inner part has an internal screw thread to mate with the medicine bottle and close it, as usual. The outer part snaps over the first part, to hide it, and looks like an ordinary cap. The ends of projections on the outer part engage with ribs on the inner part as the outer cap is screwed clockwise, to close the cap by turning the inner part. We use a ratchet like system, so the projections will ride over the ribs if the outer part is 'unscrewed', so the inner part stays still.

When you want to undo the cap, you have to press the outer part axially downwards, which engages teeth or castellations on the outer part with teeth on the inner part. Twisting the outer part anti-clockwise will then turn the inner part to open the cap. We found that it is much easier for an elderly person to push and twist, than to squeeze and twist.

We need to keep the teeth normally disengaged, so we urged the two parts apart. To do this, we have made the projections on the outer part in the form of springy arms. These are long enough to keep the teeth disengaged if the outer part is simply turned. So the user turns the outer part, and meets little or no resistance as the projections ride over the ribs. But he can't force anything. He has to push the outer part down, at which point the teeth engage, and the cap opens as wanted.

The parts can each be moulded from plastic, though the inner part could be pressed from metal if the springy arms are on the upper part. Another plus point for us is that the cap fits on a normal bottle neck: the medicine people don't want to change their existing bottles.

We are off to a packaging conference tonight, so can you get something on file today and get the patent office search done straight away so I can show my board that we really have something protectable here.

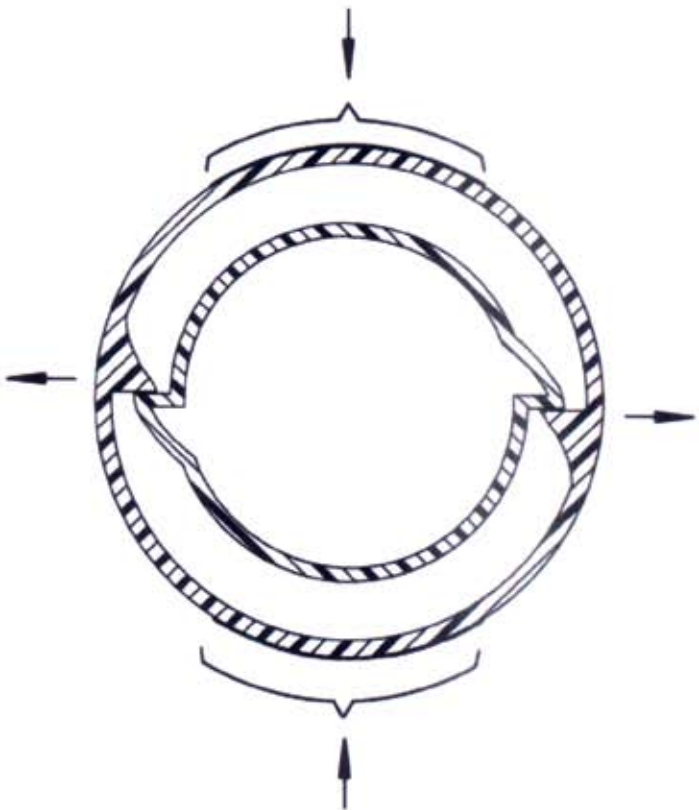
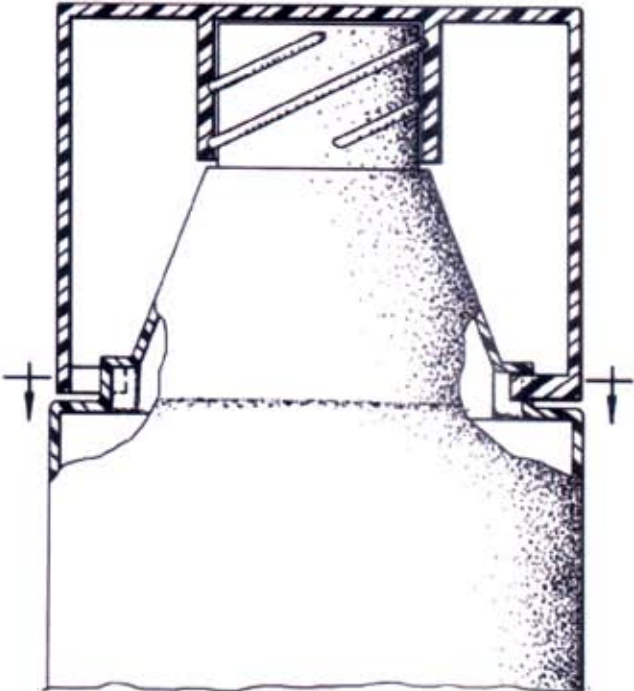
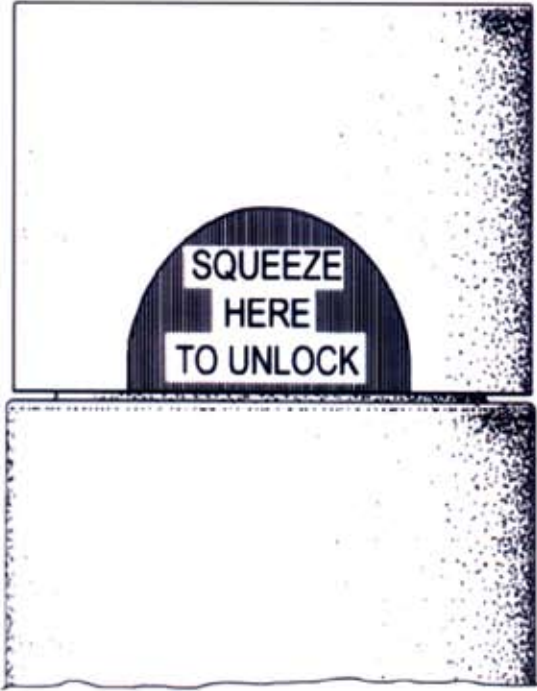
Many thanks

Andy

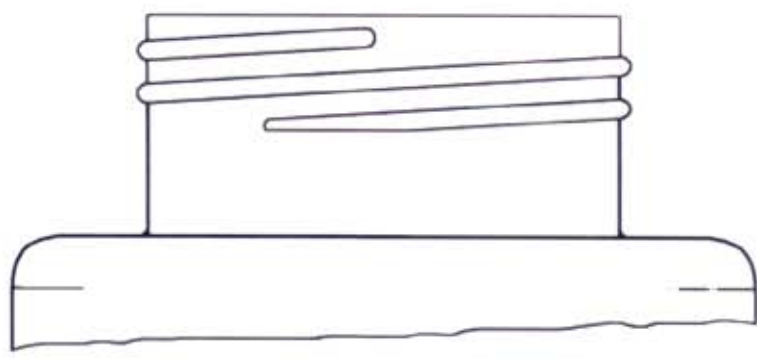
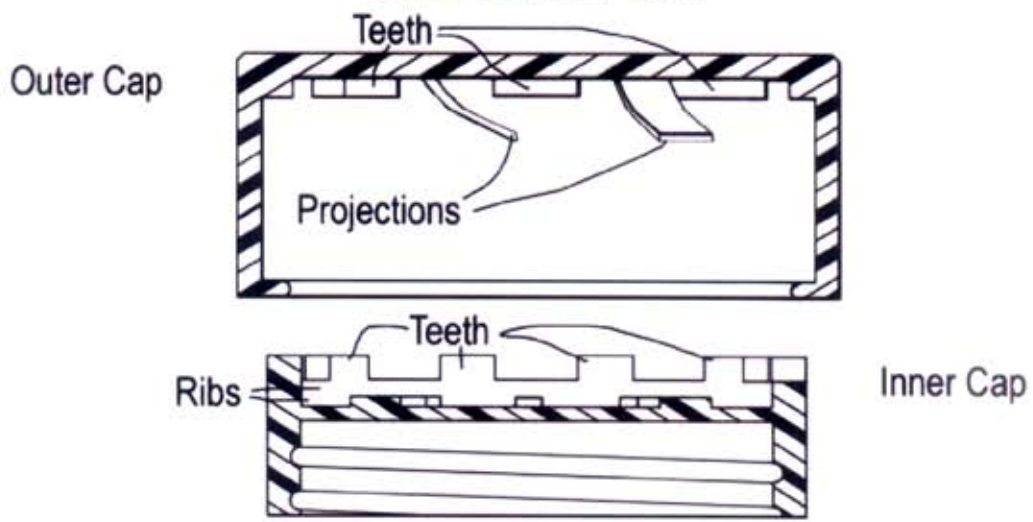
**Marks will be allocated as follows:**

<b>INTRODUCTION AND DESCRIPTION</b>	<b>35 MARKS</b>
<b>CLAIMS</b>	<b>60 MARKS</b>
<b>ABSTRACT</b>	<b>5 MARKS</b>

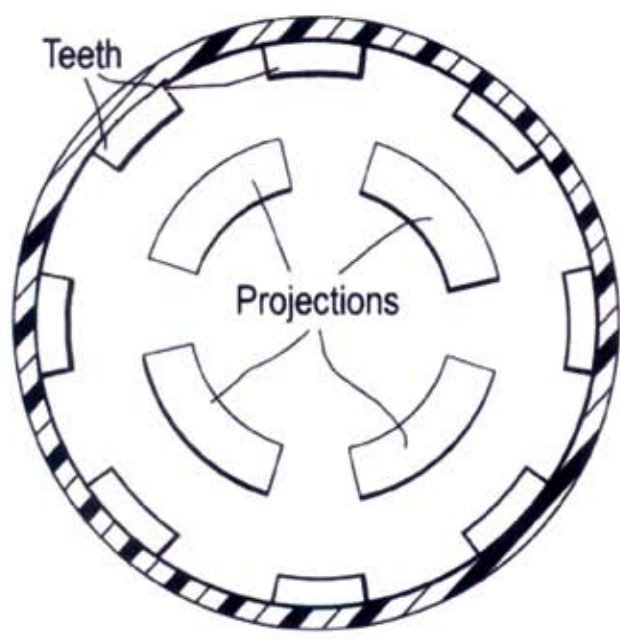
# BLEACH CAP



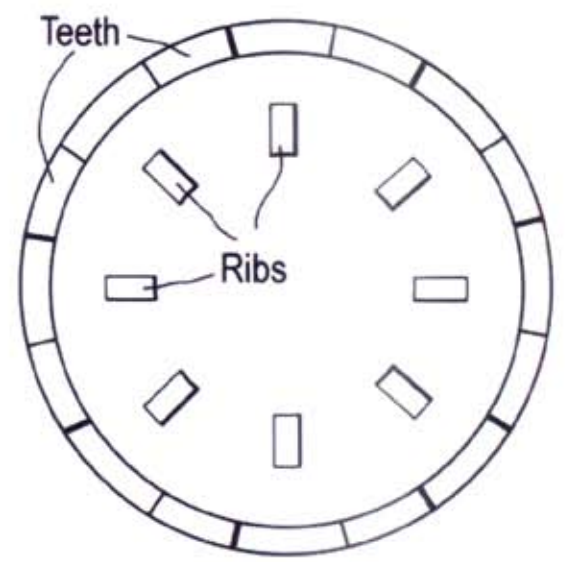
# MEDICINE CAP

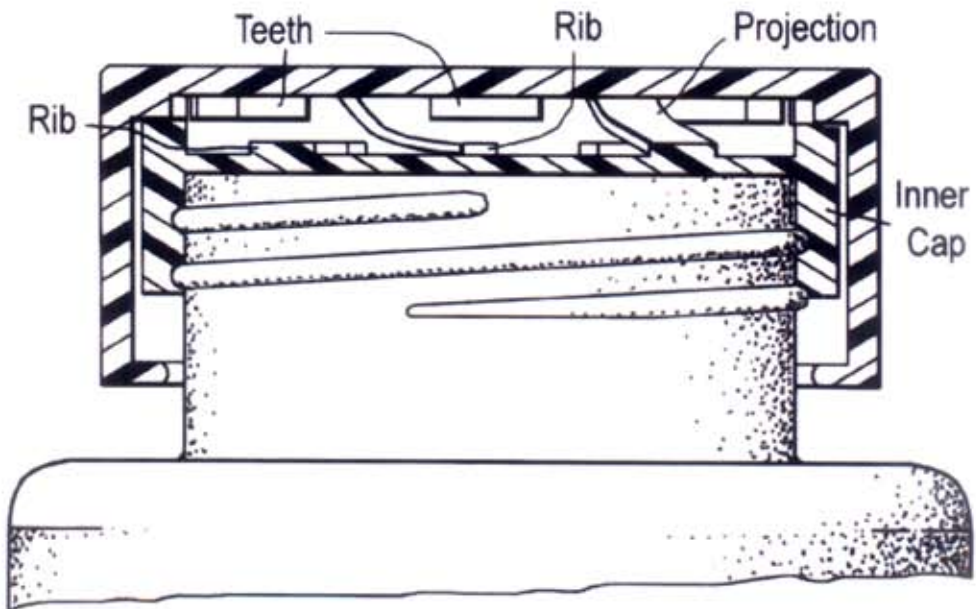
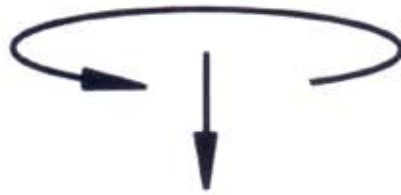
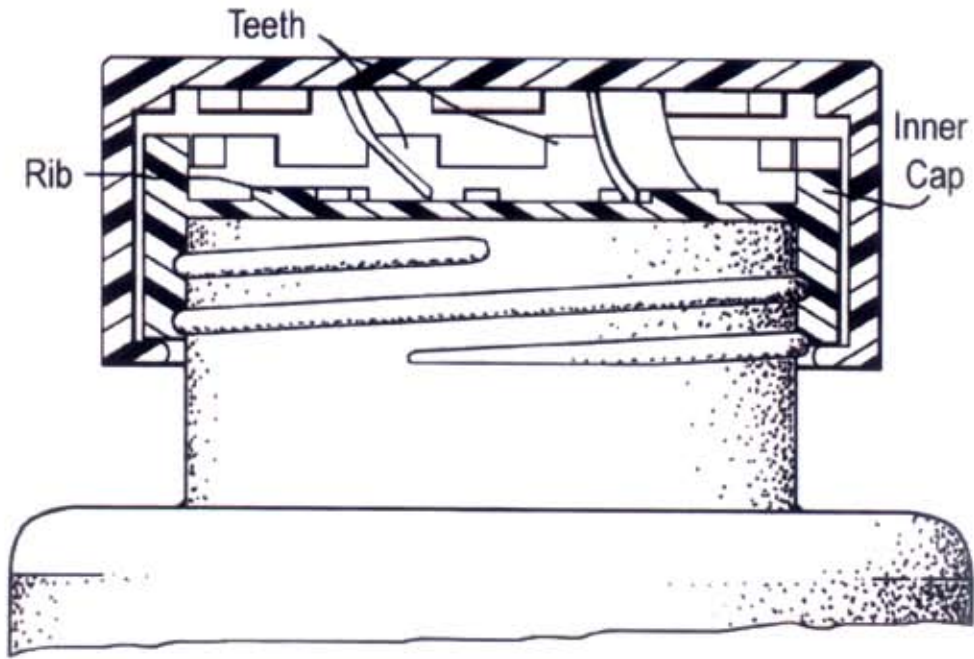


Underneath View of Outer Cap



Plan View of Inner Cap





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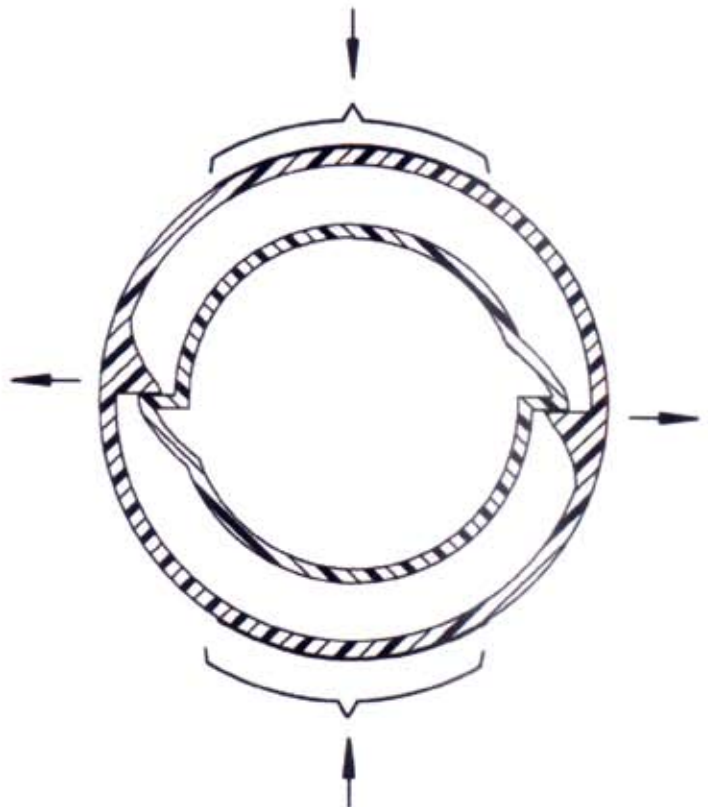
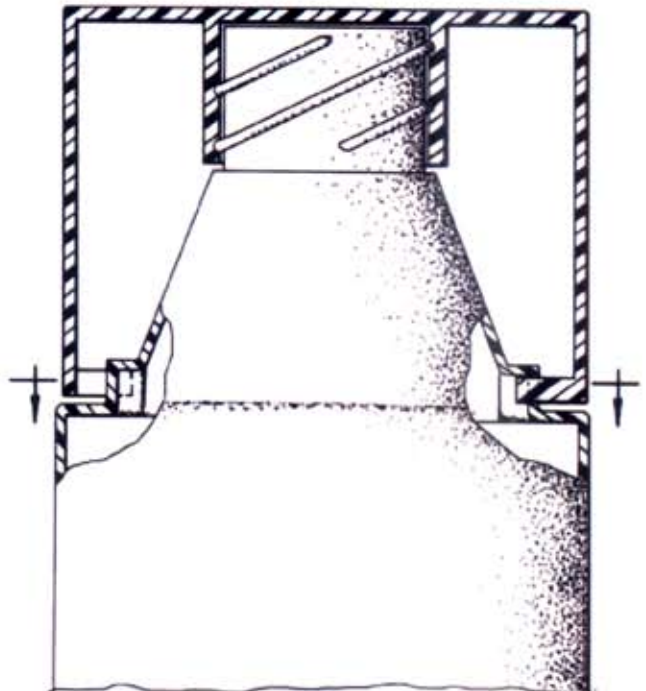
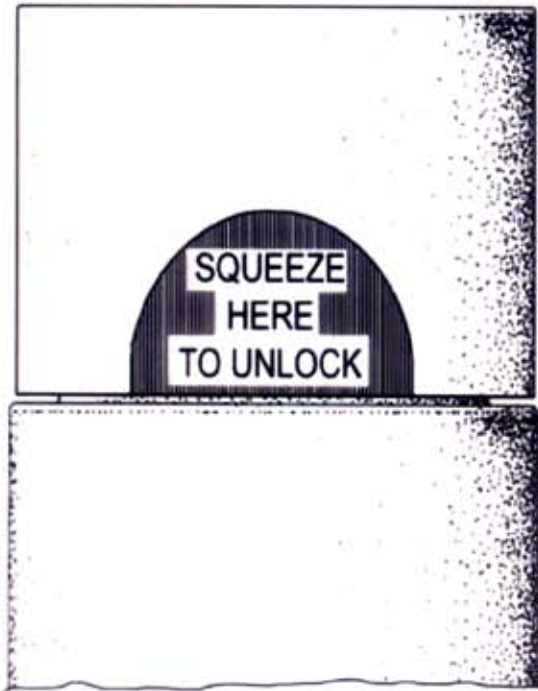
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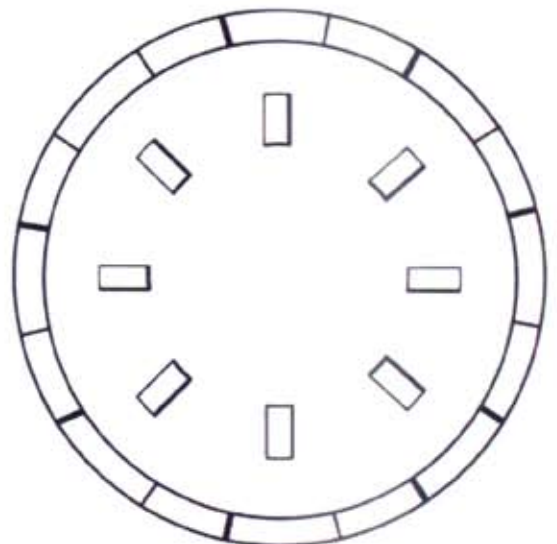
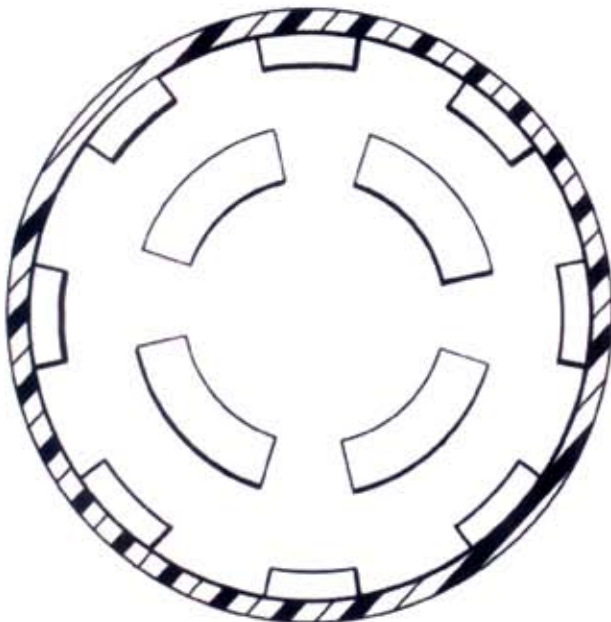
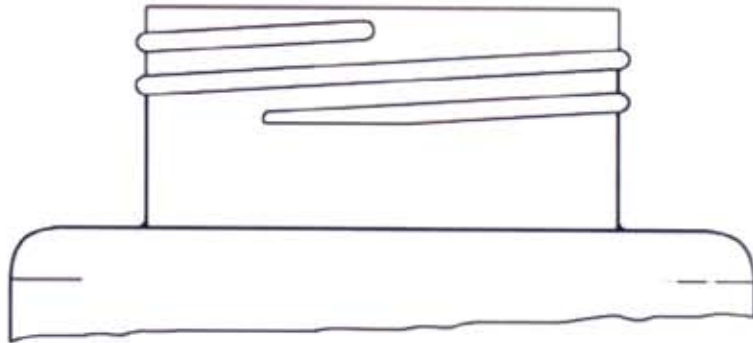
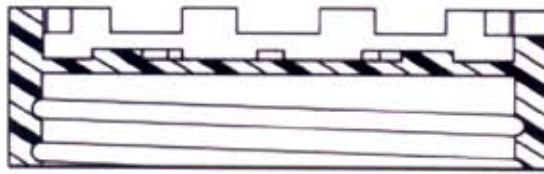
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