

THE JOINT EXAMINATION BOARD

PAPER P3

5 PREPARATION OF SPECIFICATIONS FOR UNITED KINGDOM AND OVERSEAS PATENTS

16th November 2001

10:00 a.m. - 2:00 p.m.

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Please read the following instructions carefully. This is a **FOUR HOUR** paper.

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1. Check the contents of this envelope. You should have *three (3) pages* of question paper including these instructions, *two (2) sets of the drawings (one with and one without legends) each set being of two (2) sheets and making (7) pages/sheets in all.*

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2. In the appropriate boxes at the top of each sheet please enter the designation of the paper (P3), the question number and your examination number. You should write only on one side of the paper using **BLACK** ink. Please do NOT staple pages together. You must NOT write your name anywhere in the answers.

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3. **NO** printed matter or other written material may be taken into the examination room.

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4. Answers **MUST be legible**. If the examiners cannot read a candidate's answer then no marks will be awarded.

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Your client, a novelty balloon manufacturer, writes as follows:

“As you know, for several years now we have been manufacturing balloons from metallised plastic webs which are heat-sealed together to form an inflatable decorative head and a neck for inflating the balloon. The process is illustrated in Fig. A of the attached drawings and shows two webs of heat-sealable metallised plastic film which are brought together over a series of rollers and heat-sealed into shape in a heat-sealing die, the excess material being trimmed at a cutting die.

Such balloons are much more impermeable to the inflating gas than traditional rubber balloons but it is important to close the neck in order to prevent the escape of the inflating gas, particularly if the inflating gas is helium. This is done by tying a string tightly around the stem, clamping a clip onto the stem or heat-sealing the stem. However, the closure provided by the string is not particularly efficient and the provision of a clip also increases the overall cost. Heat-sealing provides a very good closure but requires heat-sealing equipment on site which again increases the cost.

We have devised a flexible self-closing valve which is extremely cheap to manufacture from low-density polyethylene web, can be incorporated very easily into existing manufacturing techniques and provides an excellent closure.

I enclose a copy of the annotated drawings from our CAD system which explains the valve in more detail. I also enclose a further “clean” copy of the drawings in case you can utilise these for preparing a patent application.

The valve is very flat and very thin and pre-formed valves can be heat-sealed to the lower balloon web by a second heat-sealing die before the two balloon webs are brought together. No other modification of the existing machinery is required. As the webs are heat-sealed together a seal is formed around the junction between the

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balloon head and balloon neck, across the lower end of the valve, as well as the normal seal around the periphery of the balloon head and balloon neck.

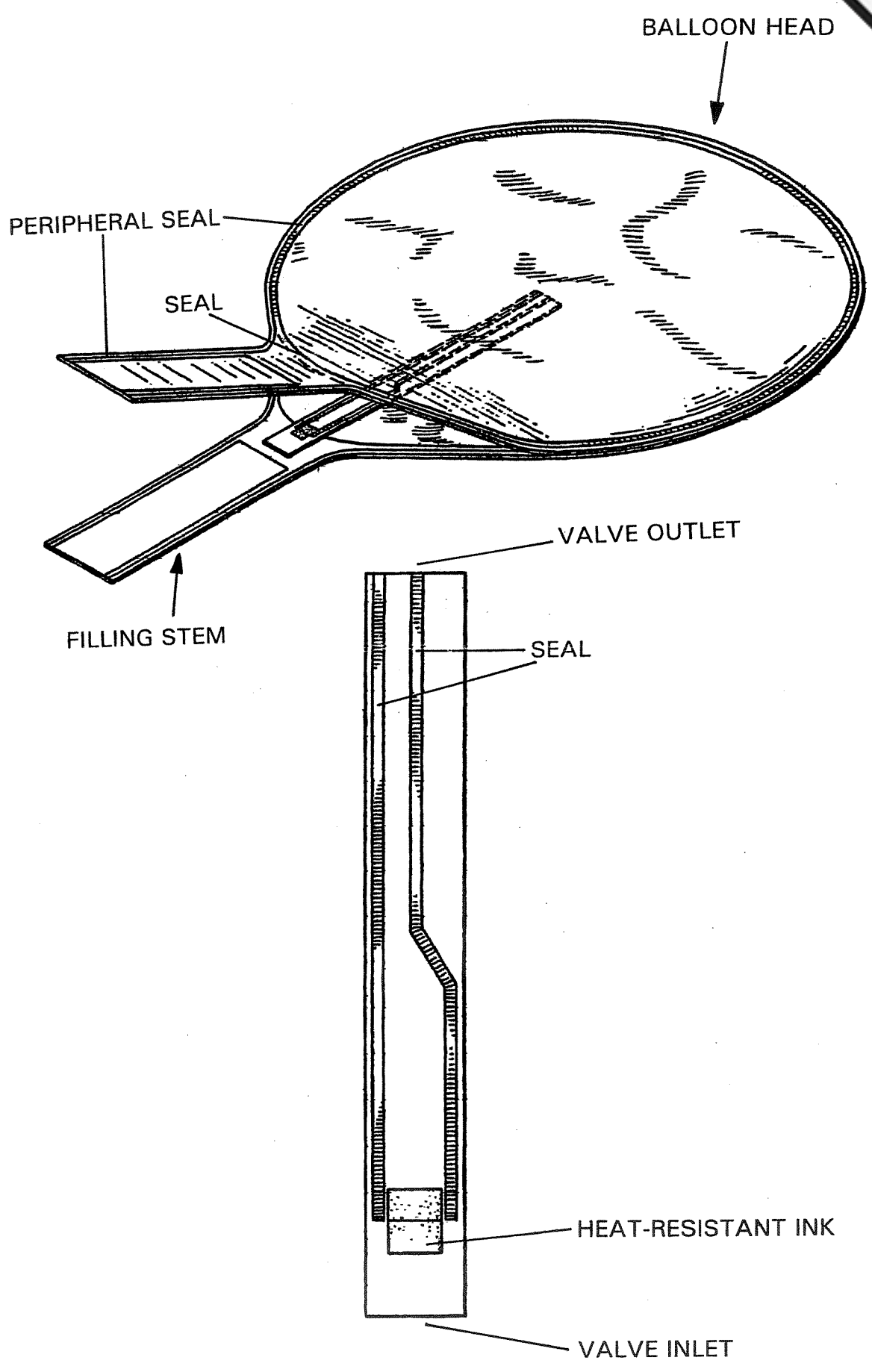
One point which probably requires further explanation is that we print a layer of heat-resistant ink, currently a nitrocellulose ink, onto a projecting tongue of the lower of the two sheets forming the valve to prevent the upper and lower sheets of the valve from being heat-sealed together when the upper and lower webs forming the balloon are heat-sealed. The valve protrudes from the neck into the head of the balloon so that gas pressure in the balloon closes the valve by forcing the upper and lower sheets of the valve together. The constriction in the valve passage merely provides a transition between the wider valve inlet and the narrower valve outlet which helps the valve to open quickly when inflating gas is applied to the inlet and to close tightly when the inflating gas is removed.

We would like you to do whatever is necessary to stop our competitors from using our invention.”

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Please prepare the following:

- (a) a specific description (20 marks);
- (b) an abstract (5 marks); and
- (c) a set of claims for a United Kingdom patent application (75 marks).



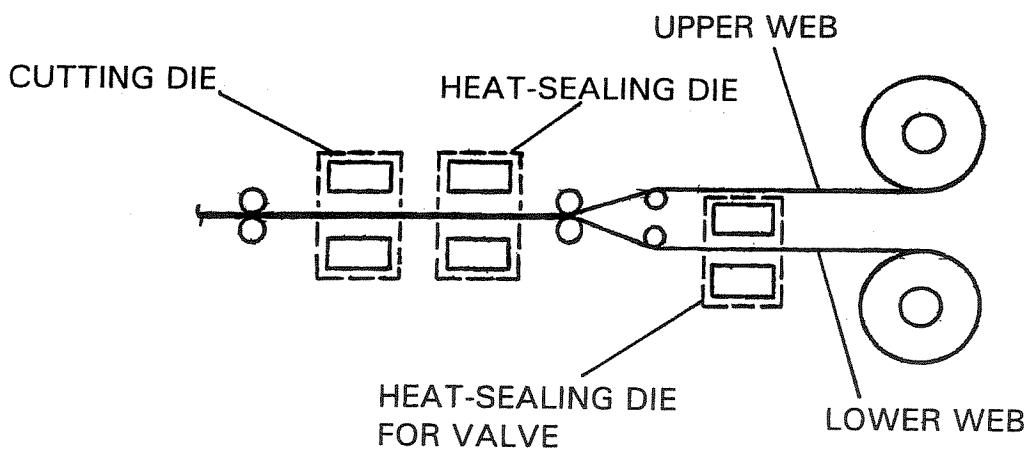
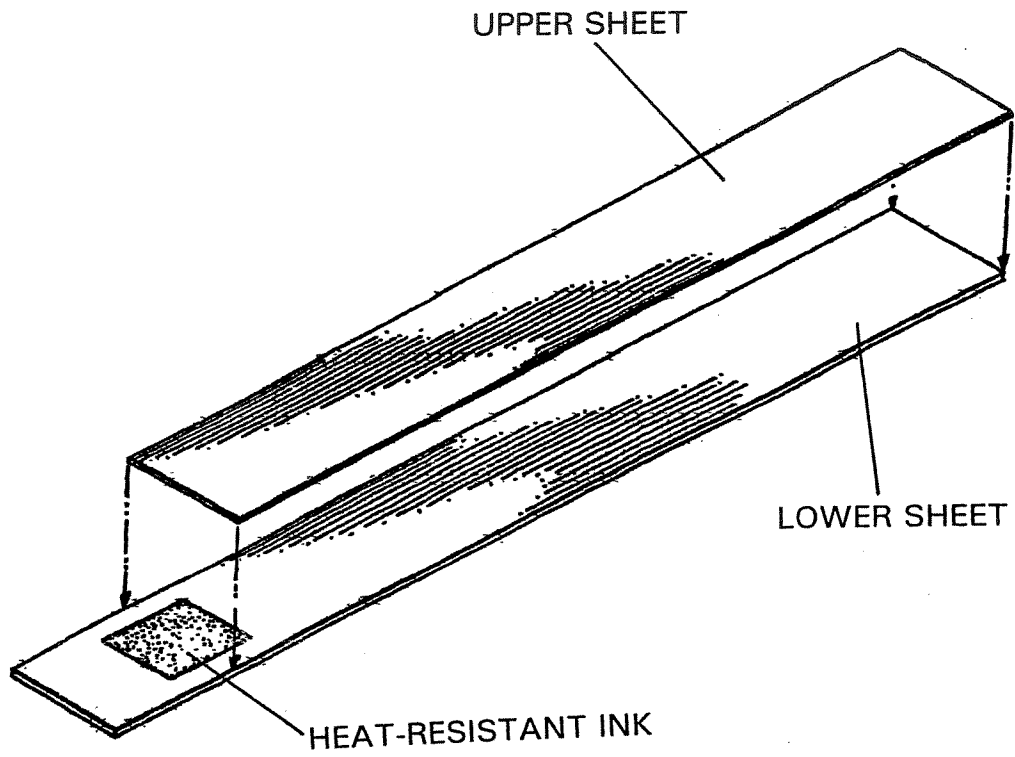


Fig.A

