## **Final Diploma**

# PatentExaminationBoard

## Amendment of Specifications FD3 (P4)

## Wednesday 14 October 10:00 to 13:00

### INSTRUCTIONS TO CANDIDATES

- 1. The whole assessment task is to be attempted.
- 2. The total number of marks available for this paper is 100.
- 3. Start each part of your answer on a new sheet of paper.
- 4. Do not state your name anywhere in the answers.
- 5. Write clearly as examiners cannot award marks to answer scripts that cannot be read.
- 6. The scripts may be photocopied for marking purposes.
  - (a) Use only **black ink**.
  - (b) Write on one side of the paper only.
  - (c) Write within the printed margins.
  - (d) Do not use highlighter pens on your answer script.
- 7. Instructions on what to do at the end of the examination are on the Candidate Cover Sheet.
- 8. This question paper consists of 25 sheets, including this sheet and comprises Assessment task (1 sheet) Client letter (1 sheet) Client application 1234321.0 (10 sheets) Official letter (1 sheet) Prior art reference D1 – US 2002/200002 (9 sheets) A copy of claims for 1234321.0 for you to use in your answer (2 sheets).

#### Assessment task

You have received the letter and documents listed on the Instructions to Candidate sheet regarding United Kingdom patent application number GB 1234321.0 which has been filed at the UK Intellectual Property Office.

#### Your task is to prepare:

- 1. a letter to the UK Intellectual Property Office in response to the Examination Report;
- 2. a set of amended claims, if considered necessary;
- 3. notes on which you would base advice to your client in which you
  - i. explain the actions you have taken and why;
  - ii. provide full reasoning for your actions;
  - iii. outline future actions, if any, that your client could take to secure full protection of its commercial interests.

Your advice should take into account that further information may be required.

Your notes should only relate to the invention(s) outlined in the client's correspondence to you.

Your notes should be directed to patent matters only.

Note the following:

- a) You are NOT required to make any amendments to the description of the client's patent application.
- b) You should accept the facts given to you and base your answer on those facts.
- c) You should not make use of any other special knowledge that you may have of the subject matter concerned.
- d) You should assume that the prior art referred to is complete.
- e) Identify clearly any amended claim set and/or divisional claim(s).

Allocation of Marks

Letter: 35 marks Claims: 35 marks Notes: 30 marks

Total: 100 marks

#### **Client letter**

Anne Turney, CPA, EPA

Dear Mrs Turney,

Thank you for the reminder about the examination report from the Patent Office about my Pongo Bin patent application. Yes, I am pleased to say we got some funding so we are in the clear for now.

I see that, not surprisingly maybe, someone has already come up with the idea of the tube for venting a bin. I still think that mine is more versatile, because their tube is part of the bin but mine can be used for existing bins. In fact, this might be more useful anyway – my neighbour asked me the other day for my prototype to use in his bin, so I think there could be a market here.

The US document the Examiner cites does not have a deodorising block. Of course, it is well enough known to put these into bins, as in the other document. And I believe some people put them in loose. But my integrated arrangement does ensure a better flow while using the deodorant economically, so maybe we can work with this idea. Although the deodorant holder makes the design quite a lot more expensive I suspect that in due time there will be demand for the idea.

Unfortunately, the company I approached with a view to asking them to make the first models has gone bust, so I will have to start again, and I think it may be another year before I have anything we can sell. Fortunately, though, I hadn't told them anything about the design.

Please deal with the response. By all means send me a draft; I am available for any queries.

Yours sincerely,

K Garbidge

#### GB patent application no. 1234321.0

#### LINED WASTE RECEPTACLES

This invention relates to lined waste receptacles, specifically (but not exclusively) to domestic waste bins that are conventionally used with a plastics bag or 'bin liner'.

The use of lined bins is widespread in domestic kitchens.
5 It is also well known that such arrangements suffer from two specific disadvantages:

The first is that there is a tendency for waste placed into such a lined bin, particularly organic kitchen waste, sooner or later to start smelling. Lids for such bins are known and can serve to limit the emission of odours, but not, of course, to suppress them entirely.

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The second problem with such bins is the well-known one of extracting the liner, particularly if the bin is large and the amount of waste material in it is substantial. The waste material in itself tends to press the plastics liner against the normally plastics interior surface of the bin itself, and, as the bag is raised, suction occurs to press the liner more firmly against the interior surface of the bin. The frictional forces between liner and bin surface then make it verv difficult to extract the liner, and the extra pull required by the person doing so can lead to tearing of the liner itself, either where gripped by the person seeking to extract it, or, more seriously, elsewhere, which may lead to soiling of the interior of the bin, thus defeating the object of putting a bin liner in it in the first place. The problem is

particularly acute for round (cylindrical) bins. Various solutions to the second problem have been proposed. One kind of bin has a cylindrical metal outer body and

plastics inner body, the inner body, in which the bin liner is inserted. The inner body tapers downwards and has vents around the bottom, allowing air into the inner body as the full liner is removed, reducing its resistance. The taper also makes it less likely for the liner to jam in the inner body. However, the taper and vent holes represent a rather specialised construction, and in practice the presence of the holes may make cleaning the inner body of the bin more difficult.

- 5 According to the invention, a bin is provided with a generally upwardly open container and a vent tube extending from top to bottom of the container, enabling air to penetrate to the bottom of the bin between the liner and the floor of the bin itself so counteracting any suction as the liner starts to be
- 10 extracted. The effect may be enhanced by allowing air to circulate around the wall of the bin through lateral perforations in the vertical portion of the vent tube, but usually the flow through the vent tube itself is sufficient to enable considerably easier extraction of the bin liner without 15 risk of damage to it.

Advantageously, a housing is located adjacent to the bottom end of the vent tube, forming a holder for the receipt of a deodorising block. Such housings have been used before for deodorising bins, but only as free-standing components, for 20 example placed in the bottom of the bin. The housing may vary widely in design, but, for example, is conveniently in the form of a perforated wall housing, for example of generally circular form as seen from above, having a recess in it for the receipt of a deodorising block. The housing may have a 25 skirt around its edge resting upon the floor of the bin, the skirt having a cut-out portion or aperture into which the vent tube, or an extension of it, may fit. Preferably the recess for the receipt of a deodorising block has perforated walls to allow air to pass into the interior of the bin. Also, it may

30 be provided with a suitable cover, for example to prevent direct contact between the bin liner and the deodorising block.

An advantage of such a construction is that, for most of the time, the deodorising effect is relatively muted and 35 deodorising block consumption accordingly small, but when the liner is removed, the airflow down the vent tube and emerging at the lower end of the tube serves to evaporate material from the deodorising block and thus release, at precisely the point in time at which it is aesthetically desirable, a pleasant deodorising/antiseptic/fresh smell which, of course, counteracts any smell arising from the contents of the liner. The composition of the deodorising block may, if desired, include other components, for example antiseptic agents.

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- The housing may be located on the base of the bin adjacent to 10 the side wall of the container, or it may be located on the base of the bin but away from the side wall, in which case the vent tube has a section running across a part of the base of the container. Alternatively, the housing may be located on the wall of the bin, near its base.
- 15 A major advantage of the invention is that the tube assembly may be retrofitted to an existing bin by a user. For example, a bin conversion kit according to the invention may be sold consisting of a tube, optionally with perforations along its sides, and of length adequate to extend most of the way up the
- 20 bin wall and, in some versions, a housing adapted to fit the end of the tube and to receive a deodorising block. In the case where the housing is to be placed on the base of the bin away from the side wall, the kit may include an elbow joint piece for fitting to the end of the tube, and a short length 25 of tube designed to fit the joint piece and the housing.

The tube can be attached to the interior of the bin by way of a set of adhesive strips or pads which can be covered, until it is desired to stick the tube on to the interior surface of the bin, by a conventional protective release sheet or foil.
30 As an alternative, double-sided adhesive pads may be used to stick the tube in place. If it is desired to have the tube removable after fitting, for example for very occasional cleaning purposes, the double-sided adhesive pads may include, between the two adhesive faces, a splittable burr or hook-andloop ('Velcro®') fastener; alternatively clips with single

adhesive pads could be provided.

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In order to enable the customer to match the length of the tube to his or her particular bin, the conversion kit will normally include an oversize tube length to be cut to fit the bin in question. Tubes of closed cross-section of extruded 5 plastics material, for example generally circular- or ovalsection plastics conduit, may easily be cut to appropriate lengths with a small hacksaw. Alternatively, the main tube can be made up of several sections fitting end-to-end, and by making them of different lengths, a selection of sections may 10 be chosen which, when fitted together, measure slightly less than the height of the bin; this will enable the top of the tube to be at or near the upper rim, and its lower end to be at or near the bin base, avoiding the need to cut any tube length. Conceivably the tube could even section to be telescopic. 15

The invention is illustrated by way of example with reference to the accompanying drawings, in which:

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- Figure 1 is a diagrammatic cutaway view of part of a bin showing one way of putting the invention into practice;
- Figure 2 is a part-sectional view of the components shown in Figure 1, in vertical section; and
- Figure 3 is a perspective cutaway view of an alternative embodiment.
- 25 Referring to Figures 1 and 2 of the drawings, the invention is shown applied to a standard rectangular waste bin 1 of conventional type, shown cut away in Figure 1. As seen there, the bin generally consists of a floor 2 and a side wall made up of four panels 3. A plastics bin liner 50 is shown 30 schematically by a dashed line. The invention naturally works just as well in the case of a round bin, which may be cylindrical or slightly tapered.

Located on one wall panel 3 is a vertical tube 4 with an open top 7. At the top end the tube is flush with the rim of the bin, though it could end below the rim - the distance is not critical. At its lower end, the tube 4 is connected by a moulded plastics elbow 8 to a short horizontal tube 9 running part-way across the floor of the bin. The tube 9 passes into a moulded deodorising block holder or housing 10 located on the floor 2 of the bin. The holder 10 has apertures 12 in its skirt and upper face, including a larger hole 12a through which the tube 9 passes. Its upper face also has a recess or bowl-shaped depression 13 in the central part, for the receipt of a deodorising block 14. The side wall of the recess 13 has perforations 15, and also has a somewhat larger hole 15a aligned with the entry point 12a of the tube 9. The recess is capped by a lid 17.

The assembly of tube 4, elbow 8, tube 9 and holder 10 is kept in place by a set of fasteners in the form of three double-15 sided adhesive burr fastener pads 20, one side of each of which is fastened by the user to the wall 3 or the floor 2 of the bin, the other side being fastened to the tube 4 or the holder 10, as the case may be.

When a bin liner full of waste is extracted from the bin, this 20 can be done without the usual suction and sticking, as air is drawn in through the open end 7 of the tube 4 and penetrates around the sides of the liner (via holes 5) and to the it (via tube 9, increasing space below recess 13, perforations 15 and apertures 12). As it flows through the 25 recess 13 it travels past the block 14; as a result, fragrance and deodorising components reach the bin and the space around it as the liner is finally lifted clear to provide a fresh smell. Thus the twin problems of odour and difficulty of liner extraction are alleviated. If desired, the lid 17 may also be perforated to enhance the dispensing of components from block 30

14 when a bin liner is removed.

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Figure 3 shows an alternative embodiment installed in a round cylindrical bin diagrammatically indicated at 30. A section of the wall has been omitted from Figure 3 to enable a vent tube 31 and deodorising block holder 32 to be seen. The vent tube 31 is made up of three sections fitting end to end. A clip 33

is adhesively mounted on the bin wall and clasps the upper end of the tube 31 so as to hold it in place. A double-sided adhesive pad holds the holder 32 in place on the floor. The holder 32 has a recess 35 for the receipt of a deodorising block, covered by a lid 36, here shown raised. The lower end of the tube 31 stops a little short of the floor of the bin and is a press fit into a socket 37 formed in the holder 32, which is therefore adjacent to the wall of the bin.

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As in the first embodiment, when a full bin liner is 10 withdrawn, air flows down the tube 31, into the interior of recess 35, round the deodorising block, and, via perforations 38 in the walls of the holder 32, into the space inside the bin 30.

#### CLAIMS

- A waste bin construction comprising a waste bin in the form of a generally upwardly open container including a base and a side wall having an upper rim for receiving a bin liner; and, running down the side wall, a vent tube having one open end at or near the base and the other at or near the upper rim of the container.
- A waste bin construction according to claim 1, further including a housing located at or near the end of the vent tube, for the receipt of a deodorising block.
- 3. A waste bin construction according to claim 2, wherein the housing is in the form of a perforated wall housing having a recess in it for the receipt of the deodorising block.
- 4. A waste bin construction according to claim 2 or 3, wherein the housing is circular in plan and includes a skirt around its edge which rests upon the floor of the bin.
- 5. A waste bin construction according to any of claims 2 to 4, wherein the housing is provided with a cover to prevent direct contact between a bin liner placed in the bin and the deodorising block.
- 6. A waste bin according to any of claims 2 to 5, in which the housing is located directly under the vent tube.
- 7. A waste bin construction according to any of claims 2 to 5, further including a substantially right-angled elbow joint piece for fitting to the bottom end of the vent tube, and a short further length of tube designed to fit the joint piece and to extend part-way across the floor of the bin.
- 8. A waste bin construction according to any preceding claim and including double-sided adhesive pads used to fix the tube in place on the interior of the side wall of the bin.
- 9. A waste bin construction according to claim 9, wherein the double-sided adhesive pads include, between the two adhesive

faces, a splittable burr fastener.

10. A waste bin construction substantially as described with reference to the attached drawings.







Fig. 2



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Fig. 3

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#### Intellectual Property Office

| Your ref:              | Bin1             | Examiner:       |
|------------------------|------------------|-----------------|
| Application no.:       | 1234321.0        | Tel.:           |
| Applicant:             | Pongo Bin Ltd.   | Date of report: |
| Latest date for reply: | 16 December 2015 | Page 1/1        |

Mr. W. Aste 01633 819999 16 August 2015

## Patents Act 1977 Examination report under Section 18(3)

#### Novelty: Section 1(1)(a)

D1: US 2002/200002 D2: EP 303030

1. Claim 1 is not new in view of D1. This document shows a bin 10 with a base and side walls, and a vertical vent tube 16.

#### **Inventive Step: Section 1(1)(b)**

2. Claims 2 to 5 would seem obvious in view of D1 and the known use of deodorant capsules as described in D2. D2 envisages housing capsules on the floor of the bin, as described in the last paragraph of description. The housings shown in D2 have perforated walls. Their precise location would not appear to be a matter of inventive activity.

Likewise, and in view of the limited options available, it is not apparent that claims 6 and 7 give rise to an inventive arrangement of the features known from D1 and D2.

Claims 8 and 9 merely envisage well-known fastening means (adhesive and hook-and-eye fasteners).

#### Clarity: Section 14(5)(b)

3. Claim 2 refers to 'the end' of the vent tube, but claim 1 mentions two ends.

#### D1-US 2002/200002

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#### Haz Bin Corp.

## Published January 23<sup>rd</sup>, 2003. Abandoned

#### Improved domestic bin arrangement

#### BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to container structures and more particularly to a lined domestic refuse container with venting for making it easier to remove a loaded trash bag or bin liner therefrom.

#### 2. Description of the Prior Art

Domestic bins generally have a cylindrical plastics inner part sitting in a metal outer part. In order to keep the parts relatively clean, the user inserts a plastic bag as a liner. When the liner is full it is difficult to remove it from the inner plastic container part, partly because of friction and partly because of vacuum under the bag. This can also lead to tearing of the bag. The present invention aims to preclude vacuum coupling between a full trash bag and the container.

#### SUMMARY OF THE INVENTION

To attain this, the present invention generally comprises a refuse container for receiving a trash bag to be filled, with a vent assembly extending up the inside of a sidewall of the container to vent air beneath the full trash bag to allow air into the container under the full trash bag.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood from the following examples, illustrated in the annexed drawings, wherein:

- FIG. 1 is an illustration of a vented refuse container according to the present invention;
- FIG. 2 is a top plan view thereof;
- FIG. 3 is a cross-sectional view taken along line 3--3 of FIG. 2, and
- FIG. 4 is a further cross-sectional view of the invention detailing a flow of air beneath the trash bag.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. 1–4 show a vented refuse container structure embodying the principles and concepts of the present invention and generally designated by the reference numeral 10. More specifically, the refuse container structure 10 comprises a container 12 for receiving and supporting a trash bag 14 within it, as shown in FIGS. 3 and 4 of the drawings.

As best illustrated in FIGS. 2 to 4, the container 12 includes a bottom wall 20 having a perimeter side wall 22 circumscribing the periphery of the bottom wall and projecting upwardly from it. The perimeter side wall 22 is generally rectangular in plan view, so as to define at least one corner 24.

A vent means 16 is coupled to the interior surface of the container 12 for venting air into the container 12 beneath the trash bag 14 to preclude a vacuum coupling of the trash bag with the container.

The vent means 16 comprises a substantially rectangular panel 26 secured, e.g. by welding or adhesive such as superglue, to adjacent interior surfaces of the perimeter side wall 22 forming the corner 24. The rectangular panel 26 cooperates with the corner 24 of the perimeter side wall 22 to define a venting duct 28 extending vertically over the central part of the perimeter side wall of the container 12. By this structure, as shown in FIG. 4, air is communicated through the venting duct 28 into the container 18 near to its bottom wall 20 to preclude or reduce any vacuum coupling arising between a full trash bag 14 and the container 12.

The container could be of circular section, though then it might have to be indented to give space to form the tube, or the panel 26 might have to be an angular section, in order to form a tube of sufficient capacity.

Claims:

1. A vented refuse device comprising a container including a bottom wall, a perimeter wall projecting upwardly therefrom, the perimeter side wall being shaped so as to define at least one corner, with the corner having an arcuate interior surface; and a vent means coupled to the interior surface of the container for precluding a vacuum coupling between a trash bag and the container.

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2. A vented refuse device according to claim 1, wherein the container is generally rectangular in plan and the vent means comprises a substantially rectangular panel having opposed first and second longitudinal edges, fixed across a corner of the container.



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Fig. 2



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#### D2 – EP 303030

#### Filed 20 October 1994; Published 24 April 1996

The invention relates to a waste container with a lid, in particular a household waste bin, designed to contain a deodorant.

For household use, an important issue to resolve is the unpleasant smell that escapes from waste bins.
Known bins can be of the free-standing type or fitted inside a kitchen cabinet. Temporary manual or pedal-operated opening of the bin inevitably disseminates odours emanating from the waste. This problem may occur even if the containers are closed, due to lack of a seal between the lid and the container.

The purpose of the present invention, as it is defined in the claims, is to prevent these unpleasant smells spreading.

The claimed solution envisages means for containing a deodorizing element, preferably in the lid of the bin, so that the container remains free, and so that it is easy to access and replace the deodorizing element. Also, the deodorizing compound is located at the mouth of the bin, making it effective to neutralize the odours from the bin.

15 The invention will now be described by reference to examples, using the annexed drawings, in which:

Figure 1 is a schematic view from the front of the container embodying the invention;

Figure 2 is a plan view of the lid of the container shown in Figure 1, and

Figure 3 shows another form with a different housing for the deodorizing compound.

The container or bin 5 as illustrated in Figure 1 is of the type for receiving household waste and has a
lid 1 for opening and closing the bin. This lid is provided with means 2 designed to contain a deodorant block or bag, hereafter called simply deodorant 3.

The means 2 includes a housing 7 preferably formed in one piece with the lid 1. This housing is located in the centre of the lid and protrudes from the lower surface into the container 5. It is provided with a plurality of openings or though-holes 4 on its lower wall at least; it can also have openings on the top or on the lateral surface.

25 on the lateral surface.

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Numeral 6 indicates an upper cap of the housing 7. The cap 6 is in the form of a disc rotating on the lid 1 at a pivot 7a and held in place by friction. The cap 6 may also be provided with a plurality of holes 6a to allow the release of vapours of the deodorant outdoors even when the container is closed. In this way the room or the cupboard where the bin is located, and the interior of container, can be deodorised.

30 In Figure 3 the means 2 contains a pair of guides or profiles 8 forming a square, formed in one piece with the lid 1 or attached to it using adhesive. The lid 1 preferably has a plurality of holes 9 in the area enclosed between the guides 8. The guides carry a small drawer 12 containing a deodorizer, or a preformed deodorant package; the walls of the drawer 12 may be mesh or have perforations.

Cont...

By these means the user can easily replace the deodorizer when necessary; in addition, he can use commercially available deodorant tablets.

According to another variation the deodorant could be placed in a basket in the bottom of the bin, say in the middle. However, this is more difficult for the user to reach and also might interfere with or catch on the bag.

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Claims

- 1. A waste bin incorporating a perforated housing for containing a deodorising composition or package.
- 2. A waste bin according to claim 1, in which the housing is in the lid of the bin.
- 3. A waste bin according to claim 1 or 2, in which the housing is perforated in the top so as to deodorise the surroundings of the bin.



4 1/2



Fig. 2



4 2/2

Fig. 3



For examiner use only

(NOT FD2 – FD4)

#### SPARE COPY OF CLAIMS

- A waste bin construction comprising a waste bin in the form of a generally upwardly open container including a base and a side wall having an upper rim for receiving a bin liner; and, running down the side wall, a vent tube having one open end at or near the base and the other at or near the upper rim of the container.
- A waste bin construction according to claim 1, further including a housing located at or near the end of the vent tube, for the receipt of a deodorising block.
- 3. A waste bin construction according to claim 2, wherein the housing is in the form of a perforated wall housing having a recess in it for the receipt of the deodorising block.
- 4. A waste bin construction according to claim 2 or 3, wherein the housing is circular in plan and includes a skirt around its edge which rests upon the floor of the bin.
- 5. A waste bin construction according to any of claims 2 to 4, wherein the housing is provided with a cover to prevent direct contact between a bin liner placed in the bin and the deodorising block.
- 6. A waste bin according to any of claims 2 to 5, in which the housing is located directly under the vent tube.
- 7. A waste bin construction according to any of claims 2 to 5, further including a substantially right-angled elbow joint piece for fitting to the bottom end of the vent tube, and a short further length of tube designed to fit the joint piece and to extend part-way across the floor of the bin.
- 8. A waste bin construction according to any preceding claim and including double-sided adhesive pads used to fix the tube in place on the interior of the side wall of the bin.
- 9. A waste bin construction according to claim 9, wherein the double-sided adhesive pads include, between the two adhesive

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FD3

| Paper Ref                          |                 | Question No. |  | Sheet | of                       |  | Your Candidate No. |
|------------------------------------|-----------------|--------------|--|-------|--------------------------|--|--------------------|
|                                    |                 |              |  |       |                          |  |                    |
|                                    | (NOT FD2 – FD4) |              |  |       |                          |  |                    |
| faces, a splittable burr fastener. |                 |              |  |       | For examiner<br>use only |  |                    |

10. A waste bin construction substantially as described with reference to the attached drawings.

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