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(54) Packaging

(57) A thermoformed package (10) has four identical chambers (14A/B/C/D) which are surrounded by a transparent flange (18). Using a laser to produce burn discolourations in the package (10) indicia (14A/B/C/D) are formed on the underside of the flange (18), adjacent each chamber (14A/B/C/D) to indicate intended contents to prospective users. The indicia (14A/B/C/D) are visible through the transparent flange (18) to identify chamber contents (e.g. foodstuff) during use.

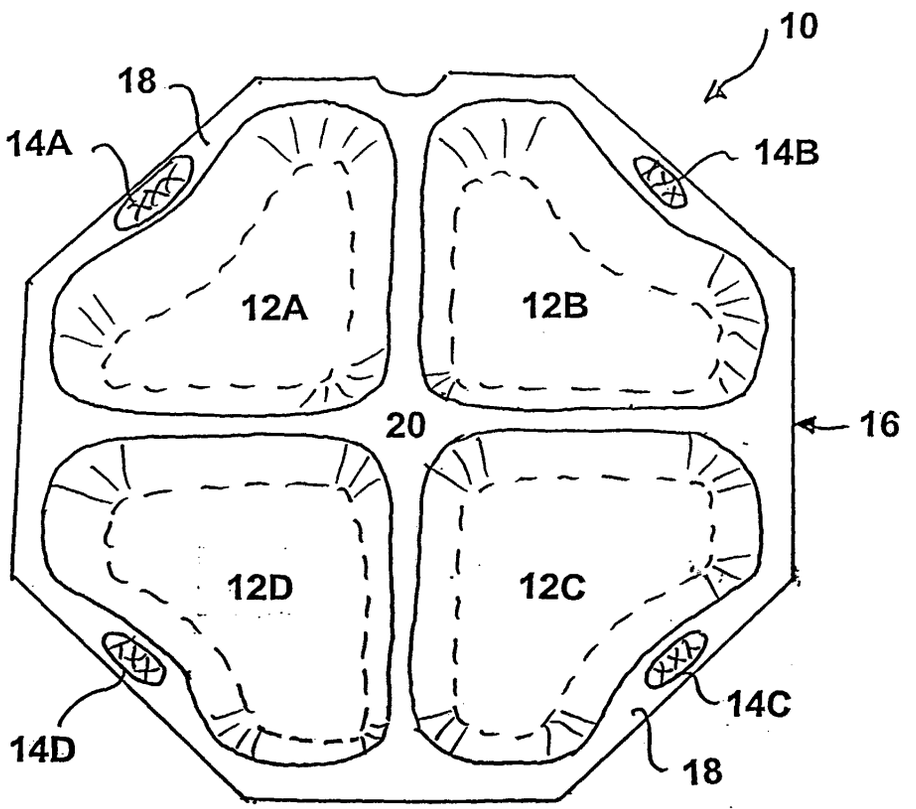

FIGURE 1

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Description

[0001] The present invention relates to packaging, and more particularly, but not exclusively, to labelled packaging and a method of labelling packaging.

[0002] A multi-compartment tray or container of plastics material e.g. PVC is commonly used to present a selection of various foodstuffs in one package to would-be customers. The foodstuffs, e.g. dips for crudités and the like, are retained and preserved in their respective compartments with a film which is hermetically sealed over the top of the tray. A lid is conventionally added to protect the film, to identify the foodstuffs contained in the packaging, and to provide a temporary cover for maintaining foodstuff freshness once the film is removed. In a multi-compartment tray containing different foodstuffs, the lid usually serves to identify the specific contents of each compartment - in other words the spatial arrangement of the foodstuffs within the packaging. While this is helpful when the lid is in place, it is of limited assistance once the lid is removed unless it is placed alongside the tray in the correct orientation. Accordingly, the present applicant proposed in GB 2350352 printing lettering or graphics identifying the content of each compartment on the underside of a transparent flange-like member associated with the top of each compartment. In this way, the printed information is visible through the transparent member, and is protected from any hermetically sealed film applied over the top of the container. Thus, it is possible to provide a multi-compartment container with the contents of each compartment clearly identified to users even when the compartments are full and the lid is discarded.

[0003] The present applicant has identified a variety of problems associated with large-scale manufacture of their printed container despite commercial success. Ink printing on plastics materials is not straightforward since the ink has a tendency to run or blur if the ink-consistency and movements of the print head/object are not carefully controlled. Aside from being a limiting factor in production rates, ink printing necessitates intensive quality control requirements to ensure that containers with defective prints are intercepted and removed from production. Furthermore, new printing plates must be created whenever new graphics are required. These plates are expensive to produce and are not readily altered once they have been formed.

[0004] The present applicant has appreciated the need for an improved way of forming lettering and graphics onto the contents of a multi-compartment container.

[0005] In accordance with a first aspect of the present invention, there is provided packaging comprising: a body defining at least one chamber for receiving foodstuff, the or each chamber having an opening; and a transparent member associated with the or each chamber, the transparent member extending laterally of the opening of the or each chamber and having graphic information formed on one side thereof for identifying chamber contents even when the or each chamber is full, characterised in that the transparent member comprises a plastics material which discolours when burnt, with the graphic information comprising a localised burn-discolouration of the transparent member.

[0006] By providing graphic information (e.g. a symbol or other indicia) from localised burn discolouration rather than from printing ink, a multi-compartment container may be obtained in which the nature of foodstuff in each chamber is ascertainable at all times in the same way as before whilst avoiding the aforementioned printing problems.

[0007] The plastics material may be thermoformable, and may be chosen in that the localised burn discolouration is coloured other than white. For example, the applicants have found PVC to be particularly suitable as a visually striking burnt orange colour is produced when burnt. The applicants have also found that a laser is particularly suitable for producing the localised burn-discolourations; the highly focussed beam of a laser enables sharply imaged graphic information to be produced.

[0008] The graphic information may be formed on an underside of the transparent member and may be intended to be viewed through the transparent member (e.g. from above the packaging) as is taught by GB 2350352. Alternatively, it may be formed on an upper side of the transparent member since, unlike ink-printed graphics, burn-discolouration may be less susceptible to damage by peeling off a hermetically sealed film applied to the top of the transparent member when covering the opening(s) of the container.

[0009] The transparent member may be flange-like. The transparent member may extend at least in part around the or each chamber opening.

[0010] The transparent member may be flush with one end of the at least one chamber, and the transparent member may be aligned with the opening. In this way, the member may serve as a surface to which a sealing film over the opening may be bonded. The transparent member may be integral with side walling of the at least one chamber.

[0011] The body may comprise a plurality of chambers, with the transparent member extending thereabout with different graphic information adjacent or associated with each chamber.

[0012] In accordance with a second aspect of the present invention, there is provided a method of labelling packaging, comprising: providing packaging comprising a body having at least one chamber for receiving foodstuff and a transparent member adjacent or associated with the at least one chamber, the at least one chamber having an opening, and the transparent member having a side extending laterally of the opening of the or each chamber; forming graphic information on one side of the transparent member for identifying chamber contents even when the at least one chamber is filled with foodstuff, characterised by forming the

transparent member from a plastics material which discolours when burnt and locally burning the transparent member to form graphic information from burn discolourations.

[0013] Embodiments of the second aspect of the invention are defined in claims 8 to 10 to which reference should now be made.

[0014] An embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:

Figure 1 shows a plan view of packaging labelled in accordance with the present invention; and
Figure 2 illustrates schematically a process for labelling the packaging of figure 1.

[0015] Figure 1 illustrates thermoformed packaging (10) having four identical chambers or compartments (12A/B/C/D), each labelled with indicia (14A/B/C/D). The four compartments are integrally formed in a tray-like body (16) of transparent plastics material, e.g. PVC. The body (16) has a peripheral member or flange (18) extending radially outwards from the centre of the upper most surface (20) of the body (16), and is flush with the said surface. The indicia (14A/B/C/D) are formed direct on the underside of the flange (18) by means of a laser beam (not shown). The indicia (14A/B/C/D) are formed adjacent to their respective compartment to indicate what the contents of the compartment will be. The indicia (14A/B/C/D) are visible through the transparent flange (18). A film (not shown) may be hermetically sealed onto the uppermost surface (20) including the flange (18) once the compartments (12A/B/C/D) are filled with foodstuffs. The hermetic seal does not interfere with the indicia because they are on the opposite side of the flange (18) to the side where the seal is effected.

[0016] Figure 2 illustrates a process for producing labelled packaging (10). The process is an automatic line, incorporating known means (40) for automatic denesting of stacked (blank) packages (10') and a programmable laser device (50), followed by known means for re-stacking (52). Individual (blank) packages are fed to the laser device (50) to enable a laser beam to burn (10') the indicia (14A/B/C/D) into the underside of the flange (18) to produce packaging (10). The burning produces an orange discolouration in the PVC plastics material. The marked packages (10) are then automatically fed out of the laser device (50) to the means for re-stacking at (52). Blank packages (10') are brought to, and marked packages (10) are removed from the automatic line by an operator (not shown).

Claims

1. Packaging (10) comprising a body (16) defining at least one chamber (12) for receiving foodstuff, the or each chamber having an opening; and a transparent member (18) associated with the or each chamber (12) the transparent member extending laterally of the opening of the or each chamber and having graphic information (14) formed on one side thereof for identifying chamber contents even when the or each chamber is full, **characterised in that** the member (18) comprises a plastics material which discolours when burnt, with the graphic information comprising a localised burn-discolouration of the member.

2. Packaging (10) according to claim 1, in which the member (18) is transparent and graphic information (14) is formed on an underside of the transparent member for viewing therethrough.

3. Packaging (10) according to claim 1 or claim 2, in which the member (18) is flange-like.

4. Packaging (10) according to any one of claims 1 to 3, in which the member (18) extends, at least in part, around the or each opening.

5. Packaging (10) according to any one of claims 1 to 4, in which the member (18) is integrally formed with side walling of the at least one chamber (12).

6. Packaging (10) according to any one of claims 1 to 5, in which the body (16) comprises a plurality of chambers (12), with the member (18) extending therearound and having different graphic information (14) adjacent or associated with each chamber.

7. A method of labelling packaging, comprising: providing packaging (10) comprising a body (16) having at least one chamber (12) for receiving foodstuff and a member (18) adjacent or associated with the at least one chamber (12), the at least one chamber (12) having an opening and the transparent member extending laterally of the opening; forming graphic information (14) on the transparent member for identifying chamber contents even when the at least one chamber is filled with foodstuff, **characterised by** forming the member from a plastics material which discolours when burnt, and locally burning the member to form graphic information from burn discolourations.

8. A method according to claim 7, in which plastics material is transparent and the graphic information (14) is formed on an underside of the member for viewing therethrough.

9. A method according to claim 7 or claim 8, in which the body (16) has a plurality of chambers (12) and further comprising forming separate graphic information (14) for each chamber.

10. A method according to any one of claims 7 to 9, in which graphic information (14) is formed using a laser beam.

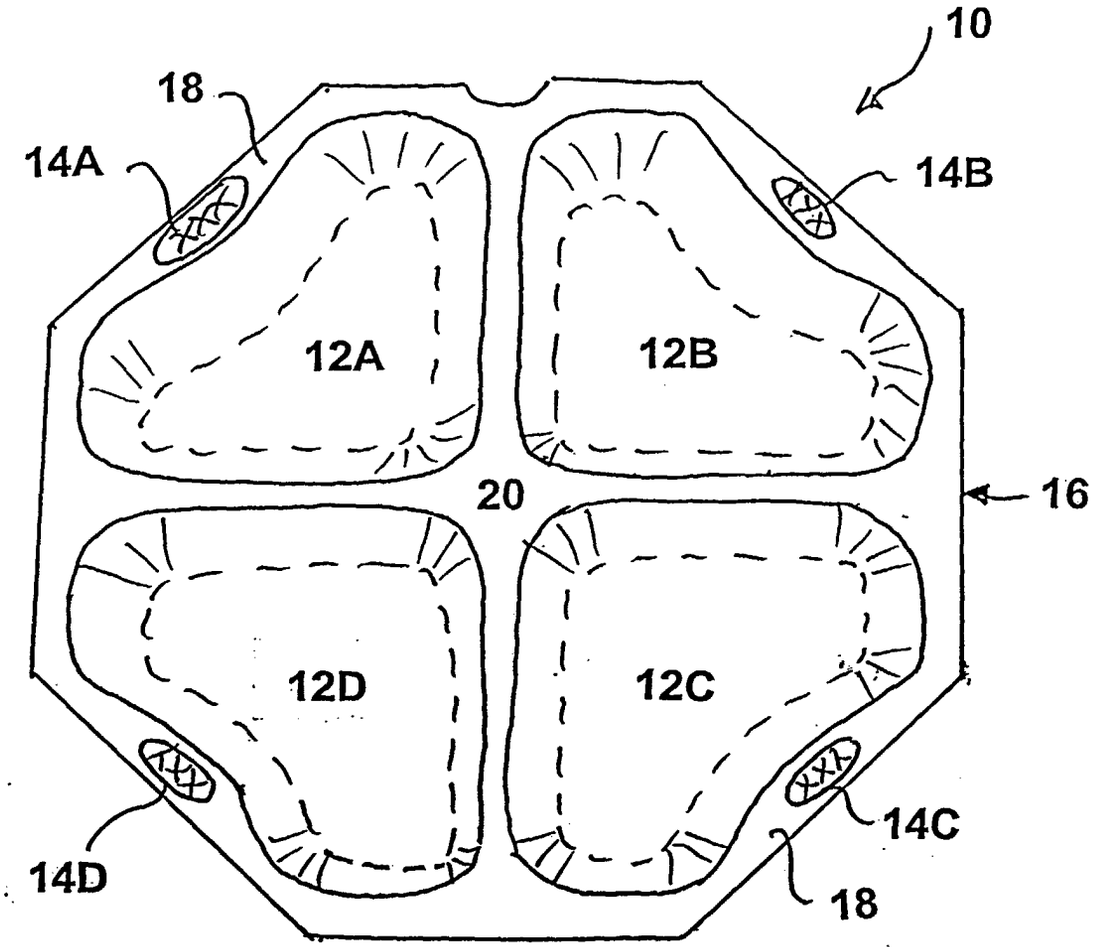

FIGURE 1

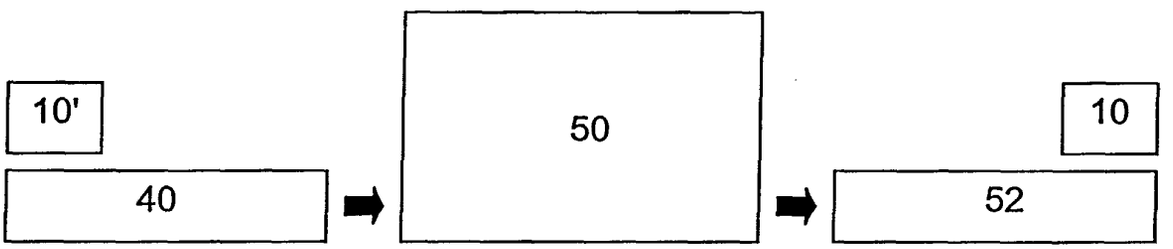

FIGURE 2

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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 3010

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	2 October 2003	Schultz, O

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 25 3010

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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