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(54) **Refrigerating means for biomedical and cytotoxic waste during their transport**

(57) Replaces conventional containers for this type of waste in hospitals and in the means of transportation to incineration plants, with the added advantages of their delayed thermal degradation by the use of a freezing

device (1) with a top lid (2), constructed so that it is stackable and complies with all insulation and containment regulations for these products, as well as including inside the small single-use containers (3).

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**Description****OBJECT OF THE INVENTION**

[0001] The present invention relates to refrigeration means for biomedical and cytotoxic waste during their transport, from among the various means for refrigeration of thermo-degradable products.

[0002] The present invention is characterised by a special incorporation of a stackable freezing device specifically constructed to comply with regulations regarding these products, both in the location of containers for them in hospital sites and in the means of transport to incineration plants.

**BACKGROUND OF THE INVENTION**

[0003] Refrigeration means for products of a biological origin are widely known and used, and no further information should be required on them.

[0004] Also known are containers for hospital waste and the like, which must comply with the requirements of wide ranging regulations from the point of view of the diverse legislation regarding transport of hazardous merchandise as well as labour laws protecting workers from biological agents, such as Royal Decree 664/97 in articles 4, 6, 9 and 14.

[0005] The same can be said regarding environmental protection laws which regulate activities of production and management of biomedical and cytotoxic waste, such as Royal Decree 83/99 in Articles 5, 6, 17, 18, 19, 20 and 21.

[0006] The applicant is not aware of any refrigeration means for this type of waste which include the cold chain in their handling from their hospital storage to their delivery to proper installations where they are treated and discarded.

**DESCRIPTION OF THE INVENTION**

[0007] The invention object of the present invention relates to a refrigeration means for biomedical and cytotoxic waste during their transport, from among the various means for refrigeration of a diversity of conventional thermo-degradable products, characterised by its particular application to specific products produced in hospitals and the like, originating in treatment wards, haemodialysis, extractions, intensive care units, operation rooms, laboratories, as well as intermediate deposits and boxes of the various wards.

[0008] The invention is characterised by the special incorporation of a freezing device designed with a modular and stackable construction and having all the requirements to comply with regulations for these products, involving their insulation and containment, not only at the location of these waste containers in the hospital site with their perfect replacement and with the added benefits of delayed thermal degradation, but also in the

means of transport of this biomedical and cytotoxic waste to the incineration plants, with the same added benefits as in the hospital.

**DESCRIPTION OF THE DRAWINGS**

[0009] The characteristics of the present invention will be better understood in view of the accompanying drawings of a preferred embodiment of the invention, where for purposes of illustration only and in no way meant as a definition of the limits of the invention the following is shown:

[0010] Figure 1 shows a perspective view of one of these refrigeration modules in an open position.

[0011] Figures 2 shows a plan view of the conventional containers contained in the refrigerator.

**PREFERRED EMBODIMENT OF THE INVENTION**

[0012] In view of the above, the present invention relates to refrigeration means for biomedical and cytotoxic waste during their transport, from among the various means for refrigeration of thermo-degradable products, characterised by the particular application to this waste by replacement of conventional containers in hospitals and in the means of transport to incineration plants, by using a freezing device (1) with a top lid (2), constructed so that it is stackable and complies with all insulation and containment regulations for these products, as well as including inside the small single-use containers (3).

[0013] The essence of the invention is not altered by variations in materials, shape, size, and arrangement of the component elements, described in a non-limiting manner, which should be sufficient for reproduction by an expert in the field.

**Claims**

1. Refrigeration means for biomedical and cytotoxic waste during their transport, from among the various means for refrigeration of thermo-degradable products, **characterised by** the particular application to this type of waste by replacing conventional containers in hospitals and in the means of transportation to incineration plants, with the added advantages of their delayed thermal degradation by the use of a freezing device (1) with a top lid (2), constructed so that it is stackable and complies with all insulation and containment regulations for these products, as well as including inside the small single-use containers (3).

FIG. 1

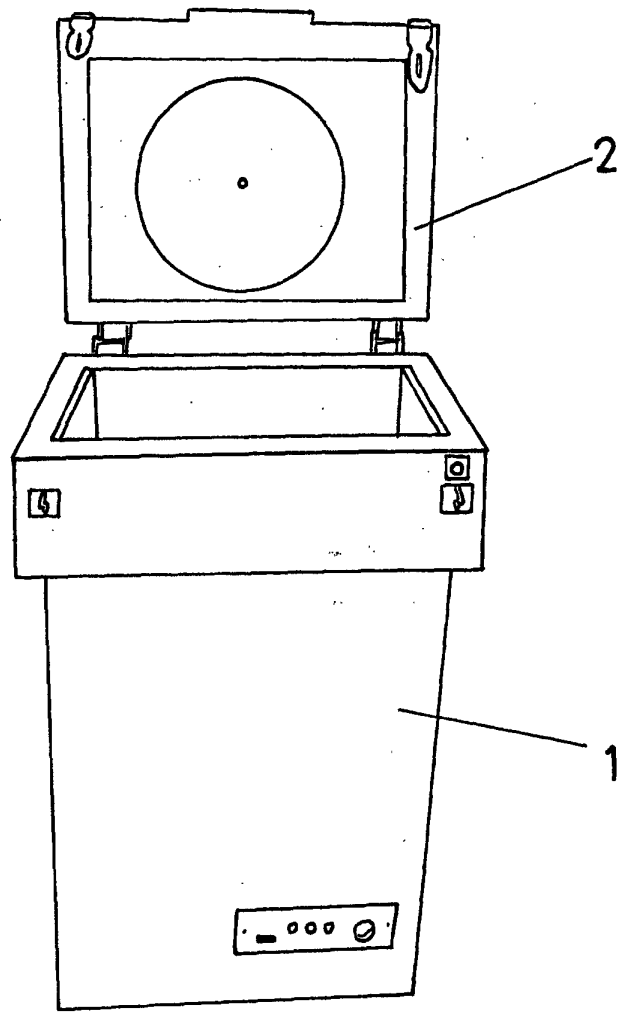
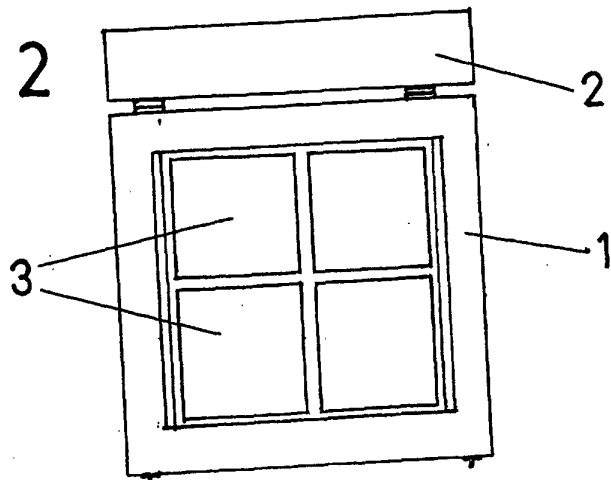


FIG. 2





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EUROPEAN SEARCH REPORT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 644 131 A (BEARFERN LTD) 22 March 1995 (1995-03-22) * column 2, line 28 - column 3, line 12 * * figures 1,2 * ---	1	B65F1/14
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>18 October 2001</b>	Examiner <b>Smolders, R</b>
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 01 50 0071

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