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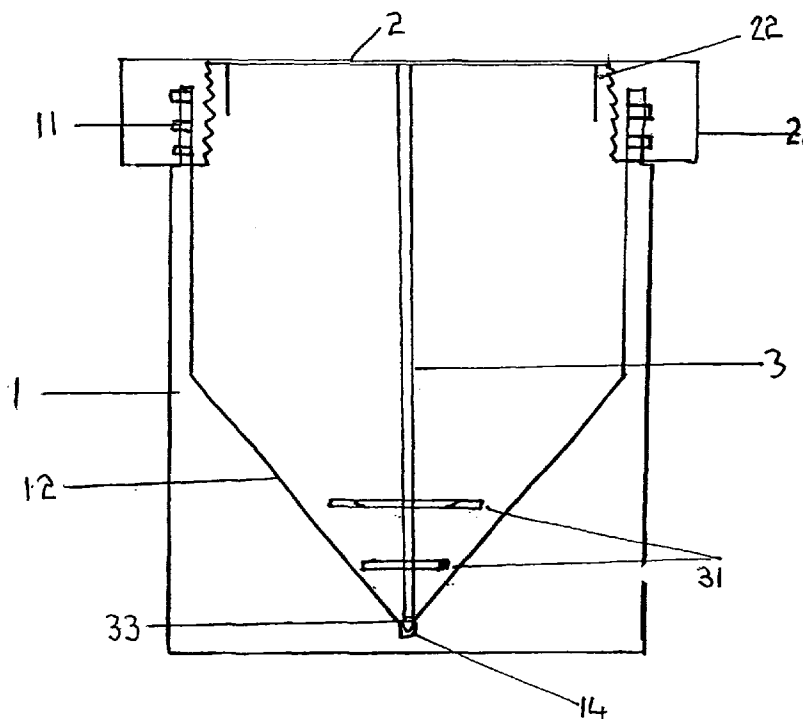
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CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG,
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(54) Title: PAINT CONTAINER WITH STIRRER INCORPORATED IN LID



(57) Abstract: A paint container 1 has a lid 2 which incorporates a stirrer 3 positioned so that the stirrer is within the container when the container is closed by the lid.



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PAINT CONTAINER WITH STIRRER INCORPORATED IN LID

This invention relates to an improved way to store paint and to prepare it for use. Some paints by their nature separate after manufacture – the heavier products migrate to the bottom of the container, the lighter ingredients to the top.

When opening such a paint container, the owner is expected to obtain a clean, strong stirring rod and re-mix the product. This is time consuming, can contaminate the paint if the stirrer is not clean and leaves the owner with a paint-covered rod to dispose or temporarily store. During the mixing process, the heavier product can adhere to the stirring rod rather than re-mix into the lighter product, and so when the stirring rod is removed the important chemical balance of the paint can be lost.

This effect is particularly problematic where the stirring rod is large in relation to the size of the paint container. Such an example would be small ‘tinlets’ of paint produced in the model and hobby industry.

To overcome these problems, this invention proposes to incorporate a stirring rod within the paint container.

GB-A-1500540, US-A-6419385, US-A-5622289, US-A-5533802 and US-A-4422770 all describe paint cans incorporating a stirrer on a shaft passing through the lid, which shaft can be connected to an external handle or drill attachment for stirring the paint.

DE-A-4441639 describes a bottle for nail varnish or paint having a brush held within the bottle.

A paint container according to the present invention, having a lid adapted to close the container, is characterised in that the lid incorporates a stirrer positioned so that the stirrer is wholly within the container when the container is closed by the lid.

The stirrer can in general be any shape which stirs the paint within the container when the lid is rotated. Usually this requires the stirrer to have at least one portion extending in a direction transverse to the axis of the container.

The invention will now be described by way of example with reference to the accompanying drawings, of which

Figure 1 is a diagrammatic cross-section of the paint container with the lid closed; and Figure 2 is a diagrammatic side view, partly in section, of the paint container showing the lid opened and in a position where it can be used for further stirring

The apparatus comprises a container 1 and a lid 2 carrying a stirrer 3. The container 1 has a screw thread 11 at its open end. The lid 2 has an outer lip 21 which has a screw thread on its inner surface adapted to engage the screw thread 11 to open and close the container.

The stirrer 3 is positioned centrally on the lid 2 and extends downwards into the container 1. The stirrer 3 comprises a rod having vanes 31 extending outwards therefrom. The vanes shown extend perpendicularly from the rod but vanes can alternatively be mounted at an oblique angle to the rod. In its simplest form the stirrer could be a rod or blade extending obliquely from the centre of the lid. Alternatively the stirrer can have a more complex shape, for example the shape shown in US-A-5622289, US-A- 6419385 or US-A- 4422770. The stirrer need not be positioned centrally with respect to the lid provided that it allows the lid to be unscrewed to open the paint container.

It will be appreciated that as the lid 2 is unscrewed the stirrer 3 is rotated to stir the paint in the container 1. If further stirring is necessary the lid 2 and stirrer 3 can be rotated after the container is open, as shown in Figure 2. The lid 2 preferably extends across the full width of the container 1 as shown to facilitate stirring of the paint.

Current paint tins often involve the use of separate tools to open (a screwdriver typically), which is avoided by use of a screw thread closure as shown. This not only removes the

need for the tool, but also reduces the amount of manual handling the lid requires – such handling frequently can result in further paint spillage onto other surfaces and the owners hands. Model and hobby paint is often applied with paint brush or airbrush – both require the transfer of paint to a separate application tool, which again needs separate handling and cleaning. The screw thread of the invention can be used to integrate with a number of paint application products. The screw fitting of the container might be made compatible with a range of accessories, such as paint applicators including air guns. The screw fitting might also form a child safe screw cap to ensure compliance with relevant health and safety rules covering the contents of some paint products.

The container can be of a conventional cylindrical shape, or the inside of the container can be shaped so that substantially all of the volume of the container is swept by the stirrer when the lid and stirrer are rotated. The container 1 shown in Figures 1 and 2 has an angled inner surface 12 tapering inwardly at the end remote from the lid 2 towards a small sump 14 in the base of the container to accommodate the end 33 of the stirrer 3.

The lid 2 is shown partly cut away in Figure 1. The lid has a raised wall 22 positioned inwards from the screw thread and extending into the container. The wall 22 acts as an anti-spill wall. The portion of the lid 2 within the wall 22 acts as a tray avoiding spillage of the paint running off the stirrer when the lid 2 is removed and placed upside down on a flat surface after the paint has been stirred.

The stirrer 3 may be made of metal, or of any plastic resistant to the solvent of the paint, depending on the viscosity of the paint stored in the tin and most suitable manufacturing method. The paint container 1 may be manufactured from plastic, metal or glass, depending again on chemical composition of the paint and manufacturing choice. The lid 2 may be made of metal or plastic. The stirrer 3 is fixed, preferably rigidly, to the underside of the lid 2 so that no part of the stirrer protrudes through the lid. Advantageously, the lid 2 and stirrer 3 can both be made of plastic so that the stirrer can be moulded integrally with the lid.

CLAIMS

1. A paint container having a lid adapted to close the container, wherein the lid incorporates a stirrer positioned so that the stirrer is wholly within the container when the container is closed by the lid.
2. A paint container according to Claim 1, wherein the stirrer is a rod extending from the lid into the container, the rod having at least one portion extending outwardly from the axis of the container.
3. A paint container according to Claim 2, wherein the stirrer rod has at least one vane extending outwardly from the rod.
4. A paint container according to Claim 3 wherein the inside of the container is shaped so that substantially all of the volume of the container is swept by the vane or vanes when the rod is rotated.
5. A paint container according to Claim 3 wherein the inside of the container tapers inwardly at the end remote from the lid
6. A paint container according to any of Claims 2 to 5 wherein the bottom of the inside of the container is formed with a central recess to locate the end of the stirring rod.
7. A paint container according to any of Claims 1 to 5, wherein the container has a screw thread at its open end and the lid has a screw thread adapted to engage the screw thread of the container to open and close the container, and the stirrer is shaped so as to stir paint in the container as the lid is unscrewed to open the container.

8. A paint container according to Claim 7 wherein the lid has a raised wall positioned inwardly from the screw thread and extending into the container, so that the portion of the lid within the wall can act as a tray avoiding spillage of the paint running off the stirrer after the lid and stirrer have been removed from the container and placed on a flat surface.
9. A paint container according to any of Claims 1 to 8 wherein the lid extends across the full width of the container.
10. A paint container according to any of Claims 1 to 9 wherein the stirrer is moulded integrally with the lid.
11. A painting apparatus comprising an air gun applicator adapted to be screwed onto a paint reservoir having a screw thread at the open end of the reservoir, wherein a paint container according to Claim 7 is used as the paint reservoir.

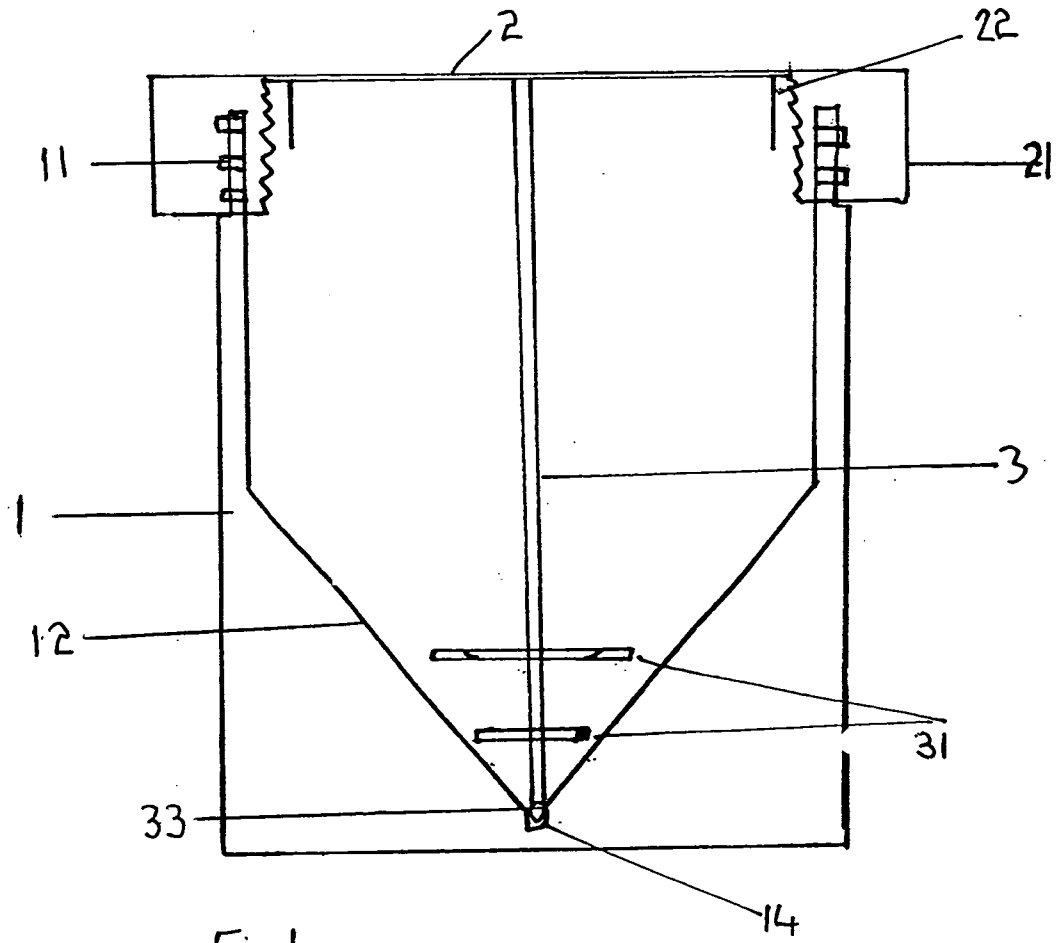


Fig 1

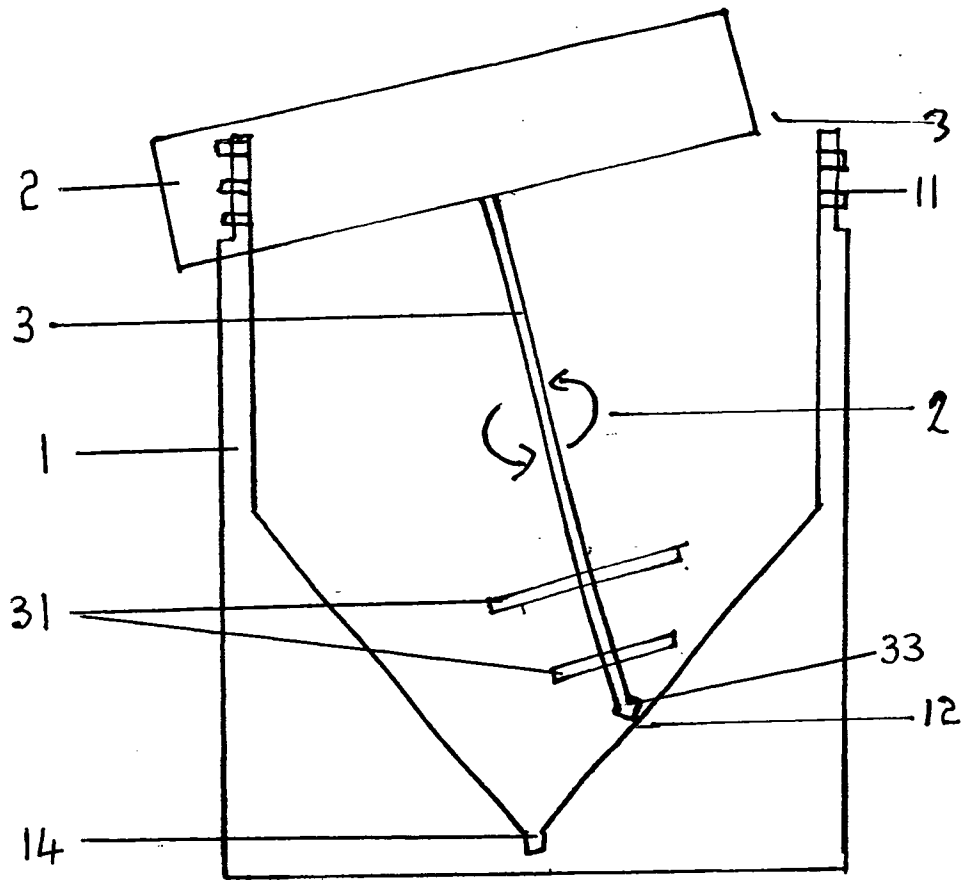


Fig 2

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International application No

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A. CLASSIFICATION OF SUBJECT MATTER INV. B44D3/06 B44D3/12 B01F15/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) B44D B65D B01F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/133356 A1 (WILLIAMS TIMOTHY J [US]) 17 July 2003 (2003-07-17)	1-6,10
Y	paragraph [0005] paragraph [0010] paragraph [0028] - paragraph [0032] claims 1,5,6; figures 2,5	7,8,11
X	DE 197 10 899 A1 (KOPPOLD JOHANN [DE]) 22 October 1998 (1998-10-22) column 1, line 62 - line 66	1,9
Y	column 2, line 1 - line 2 column 2, line 29 claims 1,2,5; figures 1,3	7,8,11
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family		
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Sigurd, Karin

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2007/010027
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