



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
08.08.2007 Bulletin 2007/32

(51) Int Cl.:
C11C 5/00 (2006.01)

(21) Application number: **07386001.7**

(22) Date of filing: **01.02.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(71) Applicant: **Fourikos, Dimitrios**
56410 Thessaloniki (GR)

(72) Inventor: **Fourikos, Dimitrios**
56410 Thessaloniki (GR)

(74) Representative: **Bakatselou, Vassiliki**
Danidon 4
56410 Thessaloniki (GR)

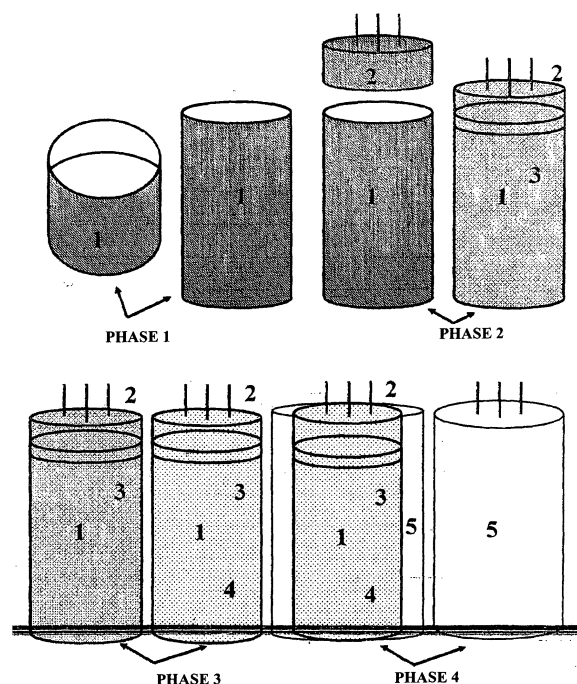
(30) Priority: **03.02.2006 GR 20060100064**

(54) **Hollow candle with processed cardboard and a manufacturing method**

(57) A hollow candle consisting of a hollow piece of cardboard (1), a head of compact wax (2) with one or more wicks that is placed on and inside the cardboard (1), which after being processed (overlaid - painted) with "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" (3) and (superior quality) "white-colored plastic paint" (4), are overlaid with a layer of wax (5). The hollow candle with processed cardboard is produced in all dimensions and shapes with one or more wicks and with various decorative objects.

An advantage of this invention is that this hollow candle with processed cardboard and the compact head of wax, compared to the previous hollow candles that were produced and circulated on the market, does not have its cardboard become black on the inside and it does not peel or break and the layer of wax does not develop bubbles. The layer of wax with the processed cardboard and the head of wax form a single body. It has the same aesthetic effect as compact candles to such an extent that it cannot be perceived that this is a hollow candle unless one attempts to lift it. And naturally, compared to compact candles, it is moved more easily due to its lighter weight, it does not bend due to heat, and it costs less. The time for its burning can reach up to 45 hours continuously without any problems, and it does not produce smoke.

FIGURE A



Description

[0001] The invention refers to a hollow candle that consists of hollow cardboard and a head of compact wax with wicks, which after being processed (overlaid and painted) with "Pure PVA Plastic Raw Material - an anionic aqueous spread of polyvinyl acetate" and "White-colored plastic paint" of superior quality, subsequently are overlaid with a layer of wax. This hollow candle is produced in all shapes, square, round, oval, pyramidal, etc., in all dimensions of both height and width (diameter), with one or more wicks and with various decorative objects such as flowers, cinnamon sticks, shells, nets, garlands, butterflies, glass, crystals, etc.

[0002] Candles of such type that are compact are widely known on the market. However, compact wax is very heavy and difficult to move, and its manufacturing cost is high due to the large amount of wax that is required, and in addition, during the hot months of the year its shape shows alteration (it bends). In addition, hollow candles made of cardboard are also in circulation, but with these, the cardboard becomes black on the inside, because it absorbs the wax, and the wax layer peels or displays breakage and bubbles. The same phenomena of peeling and breaking are observed to a greater extent among hollow candles with a plastic tube, because mixture with the wax is not achieved.

[0003] An advantage of this invention is that this hollow candle with processed cardboard and the compact head of wax, namely those that have a layer of "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" overlaid and after it has dried, have a second coat of "White-colored plastic paint" applied, compared to the previous hollow candles that were produced and circulated on the market, does not have its cardboard become black on the inside and it does not peel or break and the layer of wax does not develop bubbles. The "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" insulates the cardboard, filling its pores, and creates an impermeable compact and smooth layer that does not allow the wax to enter the pores of the cardboard. The "White-colored plastic paint" subsequently has a twofold role. Firstly, it bonds with the "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" and subsequently helps the layer of wax to adhere absolutely, with no gaps, onto the cardboard and the head of wax with excellent results. The layer of wax with the processed cardboard and the head of wax form a single body. It deserves to be noted that the hollow candles, with the problems that they displayed, were not widespread and the compact candles predominated. While in this case the hollow candle with the processed cardboard has the same aesthetic effect as the compact candle to such an extent that visually it cannot be perceived that this is a hollow candle unless one attempts to lift it. And naturally, with respect to compact candles, it is incomparably lighter and easier to move, it does not bend during the hot months of the year as occurs

with compact candles, it burns just as well, if not better, and has a lower cost.

[0004] The hollow candle according to this invention possesses the characteristic that on the inside it contains a piece of cardboard with a head of compact wax with one or more wicks, which are overlaid with a layer of "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" and a second coat of "white-colored plastic paint".

[0005] As is proven by use, the hollow candle with the processed cardboard completely fulfills requirements and the fact that the entire invention is based on cardboard causes no danger during burning (burning time: 45 hours continuously), it does not produce smoke, and naturally it can replace compact candles very well since the cardboard does not become black on the inside, it does not peel or break, and the layer of wax does not show bubbles.

[0006] Figure A shows a perspective view of the hollow candle with the processed wax during the four stages of its production.

[0007] The production process for the hollow candle with processed cardboard includes the following four stages:

HOLLOW CANDLE WITH PROCESSED CARDBOARD

[0008]

1st Phase: We take the cardboard.

2nd Phase: We place the head of wax with the wicks on the cardboard and then we overlay the cardboard with the head of wax with "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" (superior quality).

3rd Phase: After the "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" has dried, we overlay it with (superior quality) "white-colored plastic paint".

4th Phase (Final): We overlay a layer of wax, covering the processed cardboard and the head of wax in order for the candle to acquire its final shape.

[0009] Figure B shows the hollow candle with the processed cardboard in its final form in a cross-section view. It consists of one hollow piece of cardboard (1), a head of compact wax (2) with one or more wicks that is placed on and inside the cardboard, a first layer of high-quality "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" (3), a second layer of (superior quality) "white-colored plastic paint" (4), and finally the layer of wax (5) with which we overlay it all in order for it to gain its final shape.

Claims

1. A hollow candle consisting of a hollow piece of cardboard (1), a head of compact wax (2) with one or more wicks that is placed on and inside the cardboard (1) and an overlay of wax (5), **characterized by** the fact that the wax overlay (5) is not applied directly onto the cardboard but first there is an overlay of "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" (3) and afterwards a layer of (superior quality) "white-colored plastic paint" (4) on top of which the wax overlay (5) is applied.

5
10
2. The hollow candle according to claim (1) is **characterized by** the fact that the cardboard does not become black on the inside, it does not peel or break, and the layer of wax does not show bubbles, as took place earlier without the above processing and thus it can replace compact candles without problems.

15
20
3. The hollow candle according to claim (1) is **characterized by** the fact that it can be produced in all shapes, round, square, oval, pyramidal, etc.

25
4. The hollow candle according to claim (1) is **characterized by** the fact that it can be produced in all dimensions concerning both height and width (diameter).

30
5. The hollow candle according to claim (1) is **characterized by** the fact that it can also be produced with various decorative objects such as flowers, cinnamon sticks, shells, nets, garlands, butterflies, glass, crystals, etc.

35
6. Production method for hollow candles consisting of the following steps:

A: We take the cardboard. 40

B: We place the head of wax with the wicks on the cardboard and then we overlay the cardboard with the head of wax with "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" (superior quality). 45

C: After the "Pure PVA Plastic Raw Material - anionic aqueous spread of polyvinyl acetate" has dried, we overlay it with (superior quality) "white-colored plastic paint".

D: We overlay a layer of wax, covering the processed cardboard and the head of wax in order for the candle to acquire its final shape. 50

55

FIGURE A

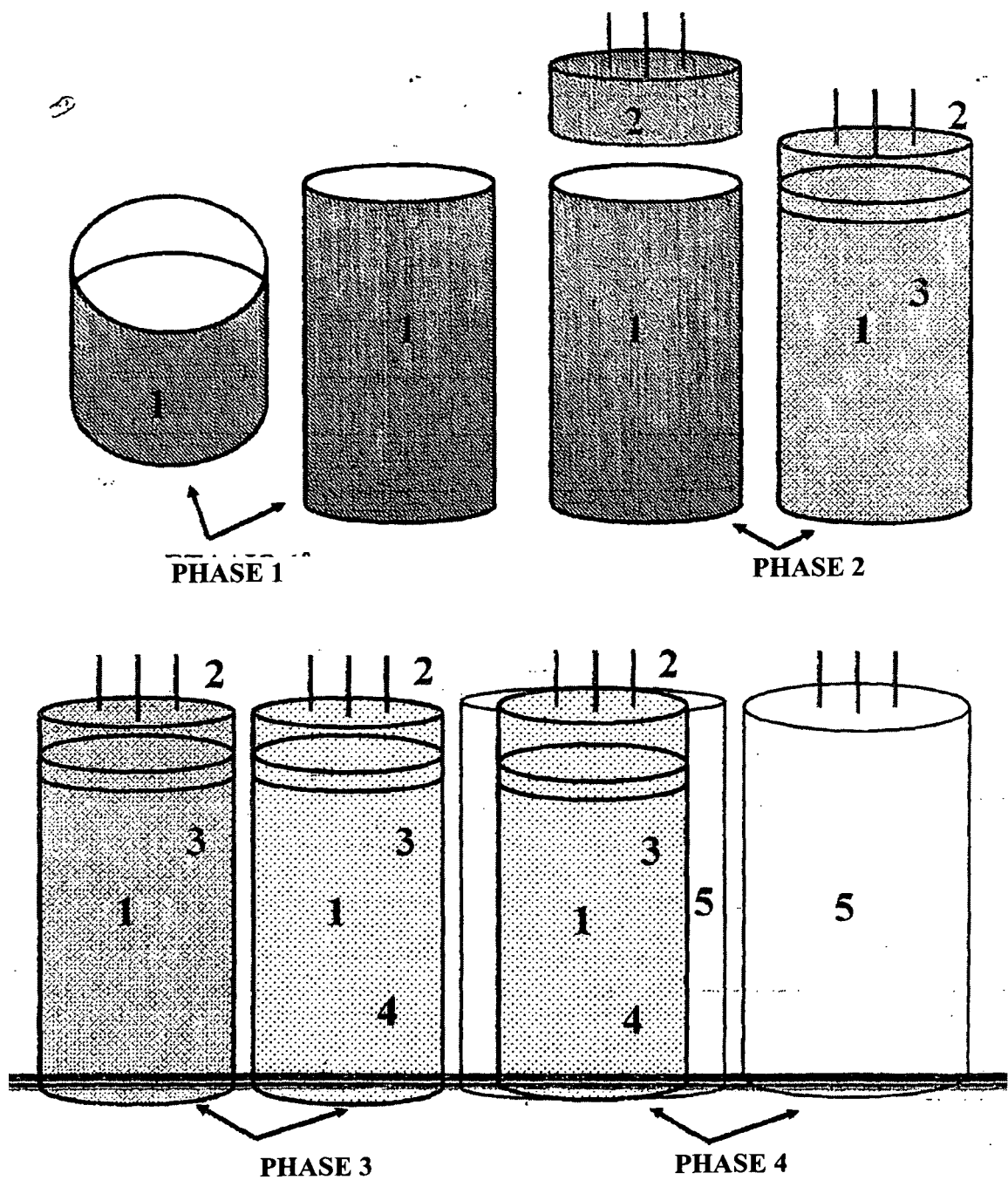
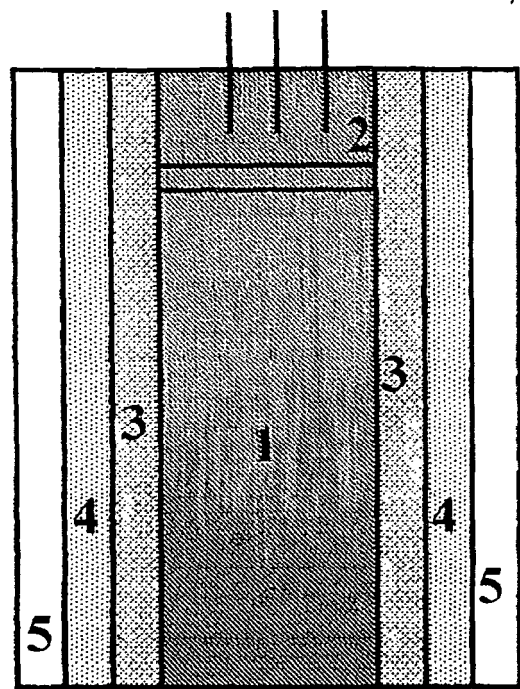


FIGURE B





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 38 6001

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 15 29 020 A1 (ZENKER FRANZ PAUL) 9 April 1970 (1970-04-09) * page 4, paragraph 2 - page 5, paragraph 2; claims 1-3,7; figure 1 *	1-6	INV. C11C5/00
A	US 3 194 031 A (GORMAN JR WILLIAM S) 13 July 1965 (1965-07-13) * column 1, line 62 - column 2, line 24; claim 4 *	1-6	
A	DE 14 29 055 A1 (ZENKER FRANZ PAUL) 10 July 1969 (1969-07-10) * the whole document *	1-6	
A	BE 892 963 A1 (ROHR PIERRE) 16 August 1982 (1982-08-16) * the whole document *	1-6	
A	DE 19 58 724 A1 (BIRMELIN JUN HERMANN) 3 June 1971 (1971-06-03) * claims 1,6; figure 1 *	1-6	TECHNICAL FIELDS SEARCHED (IPC)
A	DE 20 44 609 A1 (BIRMELIN JUN HERMANN; SCHNEEBERGER PETER) 30 March 1972 (1972-03-30) * page 5, paragraph 3 - page 6, paragraph 1; claim; figure *	1-6	C11C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 May 2007	Examiner Saettel, Damien
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

6
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 38 6001

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-05-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 1529020	A1	09-04-1970	NONE
US 3194031	A	13-07-1965	NONE
DE 1429055	A1	10-07-1969	NONE
BE 892963	A1	16-08-1982	NONE
DE 1958724	A1	03-06-1971	AT 303645 B 11-12-1972
DE 2044609	A1	30-03-1972	NONE