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(54) **CANDLE HOLDER WITH WICK POSITIONING MEANS**

(57) The current invention relates to a candle holder comprising a bottom, an opposite open side and a wall, wherein the bottom comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder. The invention also relates to a candle suited to be used in accordance with said candle holder, wherein the candle comprises a wick and wherein the candle is able to form-fitting fit in said candle holder.

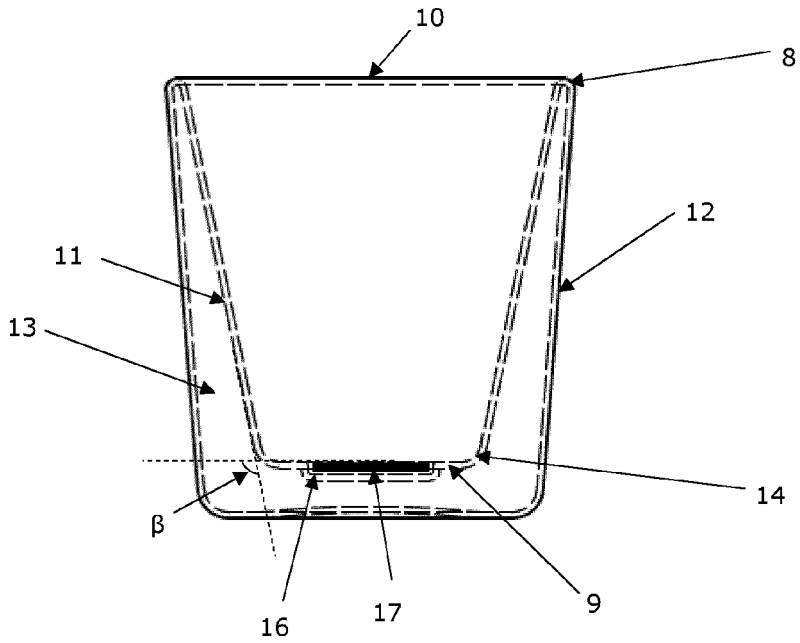

Figure 1

EP 3 907 430 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a candle holder.

[0002] In a second aspect, the present invention also relates to a candle suited to be used in accordance with said candle holder.

BACKGROUND

[0003] Candles are used since centuries for lighting and for ceremonial purposes. A candle comprises candle wax and a wick that is put on fire. The open flame of the candle is a fire hazard and it is also a risk for burns. To reduce the risk of causing a fire or burns, a candle is often placed in a candle holder that encloses at least partially the burning candle. Such a candle holder is for instance a glass cylinder with an open top side. The candle is placed inside the glass cylinder. The glass cylinder also serves a second function, ensuring that the flame of the candle is not blown out by an air displacement.

[0004] However, candle holders according to the state of the art have the following disadvantages or problems. First of all the candle holders do not allow completely burning up the candle wax. The candle burns until the wick reaches the bottom of the candle holder. Usually the heat of the flame is at this point insufficient to melt the candle wax at the bottom completely. In cases where a candle comprises a wick holder, it is possible that the wick holder floats on molten candle wax and drifts to a side of the candle holder or that due to the weight of the wick, the wick holder slides to a side of the candle holder. Due to the reduced temperature at the opposite side of the candle holder, molten candle wax solidifies at that side. There is insufficient supply of molten candle wax to the wick holder. The wick burns up completely and self-extinguishes. In the worst case, the wick holder flips over and extinguishes. In all these cases the candle extinguishes while the candle wax did not completely melt and burn up at the bottom edge of the candle holder. Candle wax residue remains in the transition zone between the bottom and the walls of the candle holder. The residue can be a reasonable amount, resulting in a reduced burning time of the candle. When a candle is used outdoor, it is possible that in cold weather conditions, the heat of the flame is insufficient to melt the candle wax completely, resulting in candle wax residue on the side walls of the candle holder. An additional problem of the candle wax residue is that it is not easy to replace the candle. The candle wax has to be removed before a new candle can be placed inside the candle holder. Otherwise the candle cannot be placed in a stable manner on the bottom of the candle holder. Removing candle wax is a tedious task. The candle wax sticks firmly to the bottom and in some cases on the side walls of the candle holder.

[0005] Secondly, although a candle holder, as for instance a glass cylinder, reduces the fire hazard and the risk of burns by the open flame, it introduces a new risk, being burns caused by a hot candle holder. The candle holder itself is heated sufficiently by the flame of the candle to cause severe burns when touched by a person. Especially in case of a candle that just extinguished, this risk is real as there is no visual indication that the candle holder is hot.

[0006] WO 2006/079405 describes a candle holder. WO 96/21124 discloses a safety cup for a paraffin candle. KR 2008 0105760 relates to a candle case. DE 72 33 182 discloses a candle holder. US 2012/077133 describes a candle for providing rapid fragrance delivery. CN 203 131 440 discloses a butter lamp. EP 2 752 619 relates to a container for candle wax. US 2020/109349 describes a gel-type scented candle and method for manufacturing the candle.

[0007] The present invention aims to resolve at least some of the problems and disadvantages mentioned above.

SUMMARY OF THE INVENTION

[0008] To this end, the present invention relates to a candle holder according to claim 1.

[0009] The big advantage of the candle holder is that the bottom of the candle holder comprises a wick-positioning means. The wick-positioning means is configured for the fixed positioning of a wick holder of a candle in the candle holder. The wick-positioning means guarantees that the wick holder remains at its initial position and does not float to a side of the candle holder or flip over. Due to this, the candle wax melts and burns completely, resulting in a longer burn time. No molten candle wax remains at the bottom of the candle holder. Replacing the candle is a very simple task and does not require removing candle wax residues.

[0010] Preferred embodiments of the candle holder are shown in any of the claims 2 to 13.

[0011] A specific preferred embodiment relates to an invention according to claim 8. The candle holder comprises an internal and external wall. The internal and external wall are thermally insulated against each other. This is beneficial to obtain a high temperature inside the candle holder, resulting in complete melting of the candle wax. The molten candle wax is burned completely by the wick. This is additionally beneficial to avoid that the outside of the candle holder is heated by the flame of the candle, removing the risk on burns when touching the candle holder. A candle holder according to the current invention enables a candle to burn nicely, completely and longer and to be replaced simply and quickly by putting a new candle in the candle holder, without the need for removing candle wax residues.

[0012] In a second aspect the present invention relates to a candle according to claim 14. The candle provides the advantage that when being placed in the candle holder, the wick is automatically positioned correctly. Additionally the dimensions of the candle correspond to the

candle holder for an optimal burning of the candle.

[0013] Preferred embodiment of the candle is shown in claim 15.

DESCRIPTION OF FIGURES

[0014]

Figures 1-5 show side views of candle holders according to alternative embodiments of the present invention.

Figure 6 shows a top view of a candle holder according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0015] Unless otherwise defined, all terms used in disclosing the invention, including technical and scientific terms, have the meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. By means of further guidance, term definitions are included to better appreciate the teaching of the present invention.

[0016] As used herein, the following terms have the following meanings:
"A", "an", and "the" as used herein refers to both singular and plural referents unless the context clearly dictates otherwise. By way of example, "a compartment" refers to one or more than one compartment.

[0017] "Comprise", "comprising", and "comprises" and "comprised of" as used herein are synonymous with "include", "including", "includes" or "contain", "containing", "contains" and are inclusive or open-ended terms that specifies the presence of what follows e.g. component and do not exclude or preclude the presence of additional, non-recited components, features, element, members, steps, known in the art or disclosed therein.

[0018] The recitation of numerical ranges by endpoints includes all numbers and fractions subsumed within that range, as well as the recited endpoints.

[0019] Reference throughout this specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases "in one embodiment" or "in an embodiment" in various places throughout this specification are not necessarily all referring to the same embodiment, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to a person skilled in the art from this disclosure, in one or more embodiments. Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

[0020] In the context of this document surface tension refers to the tendency of liquids to shrink into the minimum surface area possible.

[0021] In a first aspect, the invention relates to a candle holder.

[0022] In a preferred embodiment of the invention, the candle holder comprises a bottom, an open side opposite to said bottom and a wall. The bottom of the candle holder comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder. The wick-positioning means guarantees that the wick holder remains at its initial position and does not float to a side of the candle holder or flips over. This is advantageous because the candle wax can be burned completely, resulting in a longer burn time of the candle. On top of that there will be no remaining molten candle wax at the bottom of the candle holder. Replacing the candle is a very simple task and does not require removing candle wax residues.

[0023] In an embodiment the wick-positioning means is a self-adhesive surface, sticking to the wick holder. The bottom of the candle holder is covered with a heat-resistant adhesive. The wick holder of the candle sticks to the adhesive and remains on its initial position when all candle wax is molten. The wick holder cannot float on the molten candle wax, drift to a side of the candle holder or flip over. Preferably, the adhesive is a weak adhesive. This is beneficial to remove the wick holder easily after the candle burned completely and to replace the candle.

[0024] In another embodiment the wick-positioning means is a clamp, configured to clamp the wick holder. The clamp comprises mechanical hooks, clamps, clips or alike, tightly fitting around the wick holder and keeping the wick holder at its initial position. Alternatively the clamp comprises needles, piercing through the wick holder. The advantages are as described for a previous embodiment of a wick-positioning means.

[0025] In another embodiment the wick-positioning means comprises a protrusion on the bottom of the candle holder. The protrusion encloses the wick holder partially or completely. The wick-positioning means is one protrusion enclosing over half of the circumference of the wick holder. Alternatively the wick-positioning means comprises at least three protrusions, preferably equally spread around the circumference of the wick-holder. The protrusion ensures that the wick holder is unable to move around in the molten candle wax. The wick holder remains at its initial position. The advantages are as described for a previous embodiment of a wick-positioning means.

[0026] In another embodiment the wick-positioning means is a recess in the bottom of the candle holder. The wick holder of a candle engages with the recess. Preferably, the recess corresponds with a protrusion, for instance a dome, on the bottom of a candle. The protru-

sion comprises the wick holder of the candle. The protrusion engages with the recess when the candle is placed in the candle holder. The wick holder is kept on its initial position by the recess. The wick holder fills the recess to avoid molten candle wax flowing into the recess. The advantages are as described for a previous embodiment of a wick-positioning means.

[0027] In a further embodiment, the recess has a depth of at least 1 mm, preferably at least 1.5 mm, more preferably at least 2 mm.

[0028] The depth is at most 5 mm, preferably at most 4 mm, more preferably at most 3 mm.

[0029] In a preferred embodiment the wick-positioning means is a recess, provided with a magnet. The magnet is configured to magnetically attract the wick holder to its initial position. The magnet is firmly fixed in the recess. The advantages are as described for a previous embodiment of a wick-positioning means. The magnet is additionally beneficial in case molten candle wax can flow in the recess to avoid the wick holder to float.

[0030] The magnet is a thin magnet, rectangular or circular shaped, placed in the recess. The magnet has a top surface that is preferably equal with the bottom surface of the candle holder. This is advantageous to obtain a flat surface to place a candle.

[0031] In a further embodiment the magnet comprises a central opening. Molten candle wax is sucked through the opening in the magnet to the wick of the candle and burned up completely, resulting in a longer burn time. No molten candle wax remains at the bottom of the candle holder.

[0032] In an embodiment, the wick-positioning means is positioned centrally on the bottom of the candle holder. This is advantageous because the heat of the flame is equally distributed within the candle holder, avoiding colder spots where molten candle wax can solidify. This would result in candle wax residue and a partially burned candle.

[0033] In a preferred embodiment the candle holder is a double-walled candle holder, comprising an internal wall and an external wall, wherein the internal wall and the external wall of the candle holder are thermally insulated from each other. Because of the insulation the heat generated by burning the candle remains more inside the candle holder and increases the temperature in it. This helps to melt the candle wax and to keep it in this state. The molten candle wax will flow to the bottom of the candle holder by gravity and the candle will burn up more completely. This is additionally beneficial because it will lower the temperature of the external wall, reducing the risks on burns when a person touches the candle holder. This is also additionally beneficial when a candle is used outdoor in cold weather conditions. The inside of the candle holder is isolated from the cold outside, thanks to which the heat of the flame is sufficient to melt the candle wax completely. No candle wax residue remains on the internal wall of the candle holder.

[0034] The internal wall is thermally insulated from the external wall by an insulation material as glass wool or another heat resistant isolation material. Alternatively the internal wall is thermally insulated from the external wall by a layer of air. Alternatively the internal wall and the external wall are forming an enclosure that has been vacuumised.

[0035] In a preferred embodiment the extension of the internal wall and the extension of the bottom of the candle holder form a virtual angle β, wherein this angle is an obtuse angle. An obtuse angle is advantageous to avoid molten candle wax to solidify on the internal wall. At higher positions on the internal wall the candle wax is sufficiently heated by the flame of the candle to avoid solidification. However, at the end of the lifetime of a candle, when the flame is reaching the wick holder, the upper parts of the internal wall are still heated by the flame, but the bottom edge of the candle holder is not. Candle wax residue can be formed at the bottom edge. By having an obtuse angle, a cross section of the candle holder, substantially parallel to the bottom of the candle holder, is smaller when approaching the bottom of the candle holder. The internal wall is closer to the wick holder and the flame of the candle, what increases the temperature near the bottom edge compared to a candle holder with straight upward internal walls. This helps to avoid that the molten candle wax solidifies at the bottom edge of the candle holder.

[0036] In a further embodiment the obtuse angle 3 is at least 95°, by preference at least 100°, by more preference at least 105°. An angle of at least 95° allows the cross section to be sufficiently reduced near the bottom of the candle holder to avoid solidification of the molten candle wax and as such candle wax residue. An obtuse angle smaller than 95° would have an insufficient reduction of the cross section to increase the temperature at the bottom edge sufficiently.

[0037] In a further embodiment the obtuse angle 3 is at least 95° and at most 125°, by preference 100° and 120°, by more preference by 105° and 115°. This range allows the cross section to be sufficiently reduced near the bottom of the candle holder to avoid solidification of the molten candle wax and as such candle wax residue. An obtuse angle smaller than 95° would have an insufficient reduction of the cross section to increase the temperature at the bottom edge sufficiently. An obtuse angle bigger than 125° would reduce the cross section even more near the bottom of the candle holder, but it would increase the cross section near the open side of the candle holder at such a level that the opposite effect could start occurring, being that near the open side the heat of the flame is insufficient to completely melt the candle wax. This would result in candle wax residues near the open side.

[0038] In an embodiment the candle holder has a circular cross section. This is beneficial to have at every cross section of the candle holder, substantially parallel to the bottom, an even heat distribution by the flame of the candle. This results in candle wax that melts evenly

all over the cross section, reducing the chance on candle wax residue due to lacking colder parts in the candle holder, for instance in corners of a beam-shaped candle holder.

[0039] In a preferred embodiment the internal wall has a rounding near the bottom of the candle holder. The rounding is beneficial to avoid candle wax residue near the bottom edge of the candle holder. Molten candle wax risks to cool down faster near the bottom edge of the candle holder and to solidify. Due to the surface tension of the molten candle wax, it tends to stick to straight edges between the internal wall and the bottom of the candle holder. These two effects result in candle wax residue at the bottom edge. The tendency to stick to the bottom edge of the candle holder is tremendously reduced by having a rounding near the bottom of the candle holder. The rounding also helps molten candle wax on the internal wall to flow towards the wick holder. The rounding further reduces the cross section near the bottom of the candle holder, with the advantages as described in previous embodiments.

[0040] The rounding has a radius of at least 1.5 mm, by preference at least 2 mm, more preferably at least 3 mm and more preferably at least 4 mm. This radius is sufficiently big to reduce the sticking of the molten candle wax to the bottom edge of the candle holder due to the surface tension.

[0041] For instance the internal wall of a candle holder with a diameter of 77.5 mm at the open side and an angle 3 of 95° between internal wall and the bottom has a rounding of 25 mm near the bottom. No molten candle wax is sticking to the bottom edge of the candle holder due to the surface tension.

[0042] In a further embodiment the radius of the rounding varies along the trajectory of the rounding, resulting in a fluent transition from the inner wall to the bottom of the candle holder.

[0043] In an embodiment the candle holder comprises a first and a second container, both comprising a bottom, an opposite open side and a wall, wherein the second container is positioned inside the first container and wherein the second container comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder.

[0044] The second container is placed on the bottom of the first container. The wall of the second container does not touch the wall of the first container. The first container shields a person from the heat of the second container, reducing the risk on burns.

[0045] Alternatively the second container is suspended in the first container, wherein the wall of the second container does not touch the wall of the first container. Preferably the second container is suspended on the circumference of the open side of the first container, closing the inside of the first container. The advantages of this embodiment are similar to a double-walled candle holder as described in a previous embodiment.

[0046] It is clear for a person skilled in the art that the second container can incorporate elements of previously described embodiments of a double-walled container.

[0047] In an embodiment the candle holder comprises a candle with wick. The candle fits to the form of the internal wall. The wick is placed centrally in the cross section of the candle. This is advantageous because the wick is automatically positioned centrally after placing the candle in the candle holder. The heat of the flame is equally distributed within the candle holder, avoiding colder spots where molten candle wax can solidify. This would result in candle wax residue and a partially burned candle.

[0048] The candle is preferably a wax-based candle. Non-limitative examples of suitable waxes are stearin, fats, paraffin and beeswax.

[0049] In a further embodiment the distance between the shell of the candle and the candle holder is at most 8 mm, preferably at most 6 mm, more preferably at most 4 mm, even more preferably at most 2 mm. This margin is advantageous for the ease of production of the candle and/or the candle holder while maintaining the automatic correct positioning of the wick in the center of the candle holder.

[0050] In an embodiment the candle comprises at the bottom a wick holder. This is advantageous to engage with the wick-positioning means comprised in the bottom of the candle holder as described in a previous embodiment.

[0051] In an embodiment the wick holder exists completely of flammable material. At the end of the lifetime of the candle, the wick ignites the wick holder and the wick holder burns up completely. This is beneficial because no wick holder needs to be removed from a candle holder to replace the candle.

[0052] In a further embodiment the candle comprise a protrusion at the bottom, for instance a dome, comprising the wick holder. The protrusion is configured to fit in a recess in the bottom of the candle holder, as described in a previous embodiment of the candle holder.

[0053] In a preferred embodiment, the wick holder comprises magnetic material. This is advantageous to attract the wick holder to a magnet comprised in the wick-positioning means as described in a previous embodiment of the candle holder.

[0054] In an embodiment, the candle holder comprises a lid, configured to protect a candle against external elements. This is beneficial to avoid for instance external elements falling into the candle holder and set on fire by the flame of the candle. This is additionally beneficial when used outdoor to protect the flame against weather elements, potentially extinguishing the flame of the candle.

[0055] It will be clear for a person skilled in the art that a candle holder according to the current invention is suited for both indoor and outdoor use. The candle holder is suited as candle holder in a pub or restaurant, on the outdoor patio or as garden.

[0056] These candles are very often unattended, so it

is important that the fire hazard is low. It is of importance that a candle burns nicely, completely and sufficiently long. It is furthermore also desired that it can be replaced simply and quickly by putting a new candle in the candle holder, without the need for removing candle wax residue. An outdoor candle should also burn nice and completely in cold weather conditions. An outdoor candle should not be extinguished by weather elements. Especially for a candle used in a pub or restaurant, it is important the a person is protected against burns when touching the candle holder.

[0057] All these properties can be achieved by an embodiment or a combination of embodiments of the candle holder according to embodiments described above.

[0058] In a second aspect the invention relates to a candle suited to be used in accordance with a candle holder according to embodiments described above, wherein the candle holder is able to form-fitting fit in said candle holder.

[0059] The candle is preferably a wax-based candle. Non-limitative examples of suitable waxes are stearin, fats, paraffin and beeswax.

[0060] The wick is placed centrally in the cross section of the candle. This is advantageous because the wick is automatically positioned centrally after placing the candle in the candle holder. The heat of the flame is equally distributed within the candle holder, avoiding colder spots where molten candle wax can solidify. This would result in candle wax residue and a partially burned candle.

[0061] In a further embodiment the form and the dimensions of the candle are such that when the candle is engaged with said candle holder, the distance between the shell of the candle and said candle holder is at most 8 mm, preferably at most 6 mm, more preferably at most 4 mm, even more preferably at most 2 mm. This margin is advantageous for the production of the candle while maintaining the automatic correct positioning of the wick centrally in the candle holder.

In an embodiment the candle comprises at the bottom a wick holder. This is advantageous to engage with the wick-positioning means comprised in the bottom of the candle holder as described in a previous embodiment.

[0062] In a further embodiment the candle comprises a protrusion at the bottom, for instance a dome, comprising the wick holder. The protrusion is configured to fit in a recess in the bottom of the candle holder, as described in a previous embodiment of the candle holder.

[0063] In a preferred embodiment, the wick holder comprises magnetic material. This is advantageous to attract the wick holder to a magnet comprised in the recess in the bottom of the candle holder as described in a previous embodiment of the candle holder.

[0064] The combination of elements comprised in the candle holder provides for an advantageous effect in that together, these elements make it possible to have a controlled and complete burning of the candle, without candle residue. This will result in a longer lasting burning and an easy replacement of the candle after burning up. The invention may thereto be described according to the following embodiments:

1. A candle holder comprising a bottom, an opposite open side and a wall, wherein the bottom comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder.
2. Candle holder according to embodiment 1, wherein the wick-positioning means is a self-adhesive surface, configured to stick to the wick holder.
3. Candle holder according to embodiment 1, wherein the wick-positioning means is a clamp, configured to clamp the wick holder.
4. Candle holder according to embodiment 1, wherein the wick-positioning means comprises a protrusion on the bottom of the candle holder.
5. Candle holder according to embodiment 1, wherein the wick-positioning means is a recess in the bottom of the candle holder.
6. Candle holder according to embodiment 1, wherein the wick-positioning means is a recess, provided with a magnet.
7. Candle holder according to any of the previous embodiments 1-6, wherein the wick-positioning means is positioned centrally on the bottom of the candle holder.
8. Candle holder according to any of the previous embodiments 1-7, wherein the candle holder is a double-walled candle holder, comprising an internal wall and an external wall, wherein the internal wall and the external wall of the candle holder are thermally insulated from each other.
9. Candle holder according to embodiment 8, wherein the extension of the internal wall and the extension of the bottom of the candle holder form a virtual angle β and wherein this angle is an obtuse angle.
10. Candle holder according to embodiment 9, wherein the obtuse angle β is at least 95° and at most 125°.
11. Candle holder according to any of the previous embodiments 1-10, wherein the internal wall has a rounding near the bottom of the candle holder.
12. Candle holder according to any of the previous embodiments 1-11, wherein the candle holder comprises a candle with a wick, the candle form-fitting fits the candle holder.
13. Candle holder according to embodiment 12, wherein the distance between the shell of the candle and the candle holder is at most 8 mm.
14. Candle holder according to embodiment 12 or 13, wherein the wick of the candle is positioned above the wick-positioning means.
15. Candle suited to be used in accordance with a candle holder according to any of the previous embodiments 1-14, wherein the candle comprises a wick and wherein the candle is able to form-fitting fit in said candle holder.

16. Candle according to embodiment 15, wherein the form and dimensions of the candle are such that when the candle is engaged with said candle holder, the distance between the shell of the candle and said candle holder is at most 8 mm.

[0065] The invention is described by the following non-limiting figure which further illustrate the invention, and is not intended to, nor should it be interpreted to, limit the scope of the invention.

DESCRIPTION OF FIGURES

[0066] **Figure 1-5** show side views of candle holders according to alternative embodiments of the present invention.

[0067] The candle holder (8) is cylindrical. The candle holder (8) comprises a bottom (9), an opposite open side (10), an internal wall (11) and an external wall (12). The internal wall (11) and the external wall (12) form an enclosure (13), that has been vacuumed. The enclosure (13) thermally isolates the internal wall (11) and the external wall (12). The extension of the internal wall (11) and the extension of the bottom (9) of the candle holder (8) form a virtual angle β. The angle β is an obtuse angle. The internal wall (11) has a rounding (14) near the bottom (9) of the candle holder (8).

[0068] The bottom (9) of the embodiment according to **Figure 1** comprises a recess (16), provided with a magnet (17). The magnet (17) is beneficial to keep a magnetic wick holder of a candle on its initial position.

[0069] The bottom (9) of the embodiment according to **Figure 2** comprises a self-adhesive surface (18). The wick holder of a candle sticks to this self-adhesive surface and remains at its initial position.

[0070] The bottom (9) of the embodiment according to **Figure 3** comprises a recess (16). The recess (16) corresponds with a protrusion (19) on the bottom of a candle (20). The protrusion (19) is in this embodiment a dome. The protrusion (19) comprises the wick holder of the candle (20). The wick holder is kept on its initial position by the recess (16).

[0071] The bottom (9) of the embodiment according to **Figure 4** comprises a recess (16). The wick holder (21) of a candle engages with the recess (16). The wick holder is kept on its initial position by the recess (16).

[0072] The bottom (9) of the embodiment according to **Figure 4** comprises protrusions (22) on the bottom (9) of the candle holder (8). The protrusions (22) are positioned around the wick holder (21) to keep it on its initial position.

[0073] **Figure 6** shows a top view of a candle holder according to an embodiment of the present invention. The embodiment according to **Figure 6** corresponds to the embodiment of **Figure 5.** The candle holder (8) comprises four protrusions (22), equally spread around the circumference of the wick-holder (21).

EXAMPLES

[0074] The applicant conducted experiments with different candle holders, comprising a bottom, an opposite open side and a wall, wherein the bottom comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder.

[0075] The extension of an internal wall and the extension of the bottom of the different candle holders form a virtual angle β. Different angles β where tested, starting from 90° and going up to more than 125°. The applicant determined that for similar diameter of the candle holder, an angle β of at least 95° was required to avoid solidified wax at the bottom of the candle holder. The experimental results showed that a bigger angle β is beneficial to avoid in exceptional circumstances small amounts of solidified wax at the bottom edge of the candle holder.

[0076] The applicant also conducted experiments to compare double walled candle holders with single walled candle holders with a similar angle β to establish the influence of a double wall. The applicant concluded that with a similar angle β molten wax will less likely solidify near the bottom edge of a double walled candle holder compared to a traditional single walled candle holder.

Claims

1. A candle holder comprising a bottom, an opposite open side and a wall, **characterized in, that** the bottom comprises a wick-positioning means, configured for the fixed positioning of a wick holder of a candle in the candle holder.

2. Candle holder according to claim 1, **characterized in, that** the wick-positioning means is a self-adhesive surface, configured to stick to the wick holder.

3. Candle holder according to claim 1, **characterized in, that** the wick-positioning means is a clamp, configured to clamp the wick holder.

4. Candle holder according to claim 1, **characterized in, that** the wick-positioning means comprises a protrusion on the bottom of the candle holder.

5. Candle holder according to claim 1, **characterized in, that** the wick-positioning means is a recess in the bottom of the candle holder.

6. Candle holder according to claim 1, **characterized in, that** the wick-positioning means is a recess, provided with a magnet.

7. Candle holder according to any of the previous claim 1-6, **characterized in, that** the wick-positioning means is positioned centrally on the bottom of the candle holder.

8. Candle holder according to any of the previous claim 1-7, **characterized in, that** the candle holder is a double-walled candle holder, comprising an internal wall and an external wall, wherein the internal wall and the external wall of the candle holder are thermally insulated from each other.

9. Candle holder according to claim 8, **characterized in, that** the extension of the internal wall and the extension of the bottom of the candle holder form a virtual angle β and wherein this angle is an obtuse angle.

10. Candle holder according to claim 9, **characterized in, that** the obtuse angle β is at least 95° and at most 125°.

11. Candle holder according to any of the previous claim 1-10, **characterized in, that** the internal wall has a rounding near the bottom of the candle holder.

12. Candle holder according to any of the previous claim 1-11, **characterized in, that** the candle holder comprises a candle with a wick, the candle form-fitting fits the candle holder, wherein the distance between the shell of the candle and the candle holder is at most 8 mm.

13. Candle holder according to embodiment 12, **characterized in, that** the wick of the candle is positioned above the wick-positioning means.

14. Candle suited to be used in accordance with a candle holder according to any of the previous claim 1-13, **characterized in, that** the candle comprises a wick and wherein the candle is able to form-fitting fit in said candle holder.

15. Candle according to claim 14, **characterized in, that** the form and dimensions of the candle are such that when the candle is engaged with said candle holder, the distance between the shell of the candle and said candle holder is at most 8 mm.

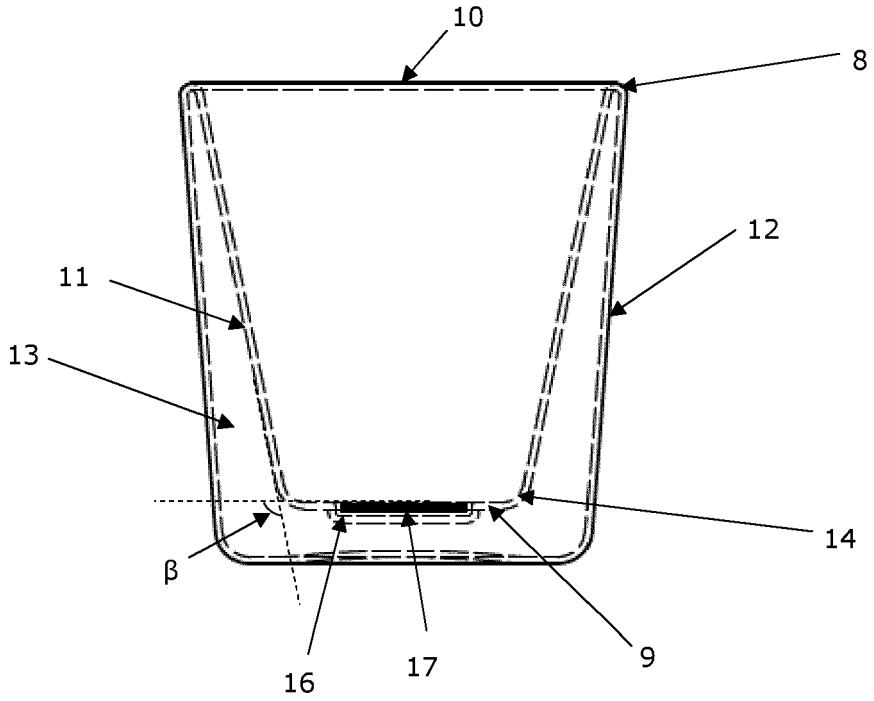

Figure 1

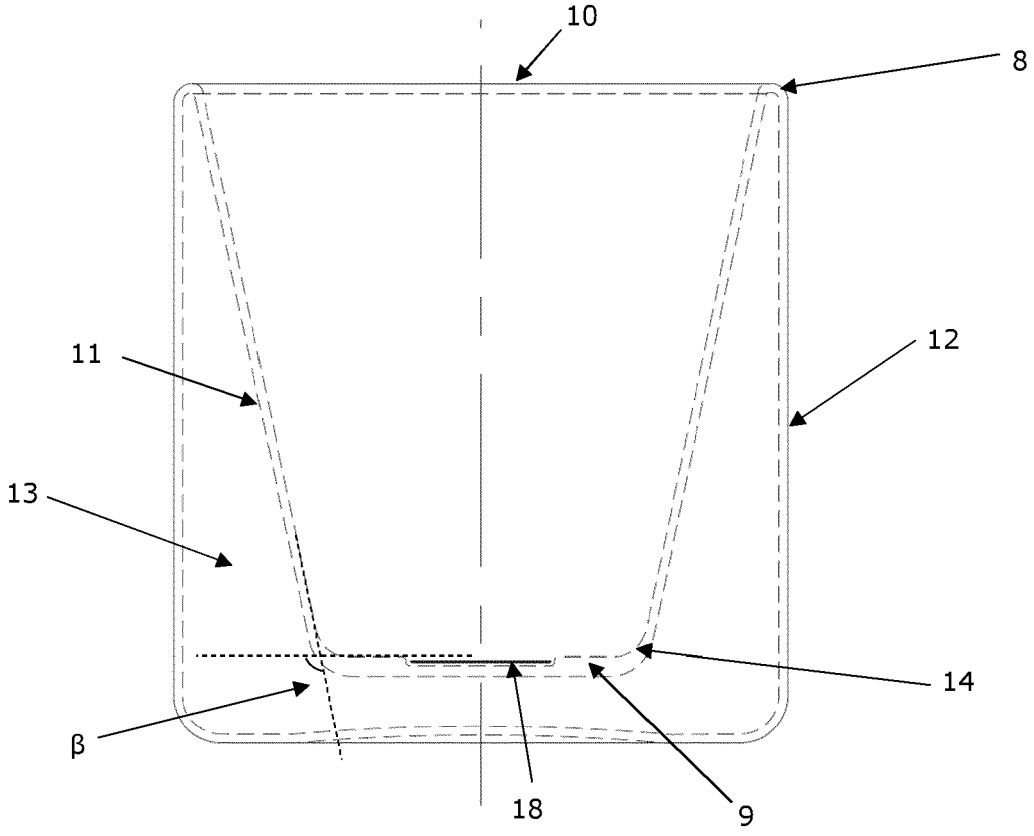

Figure 2

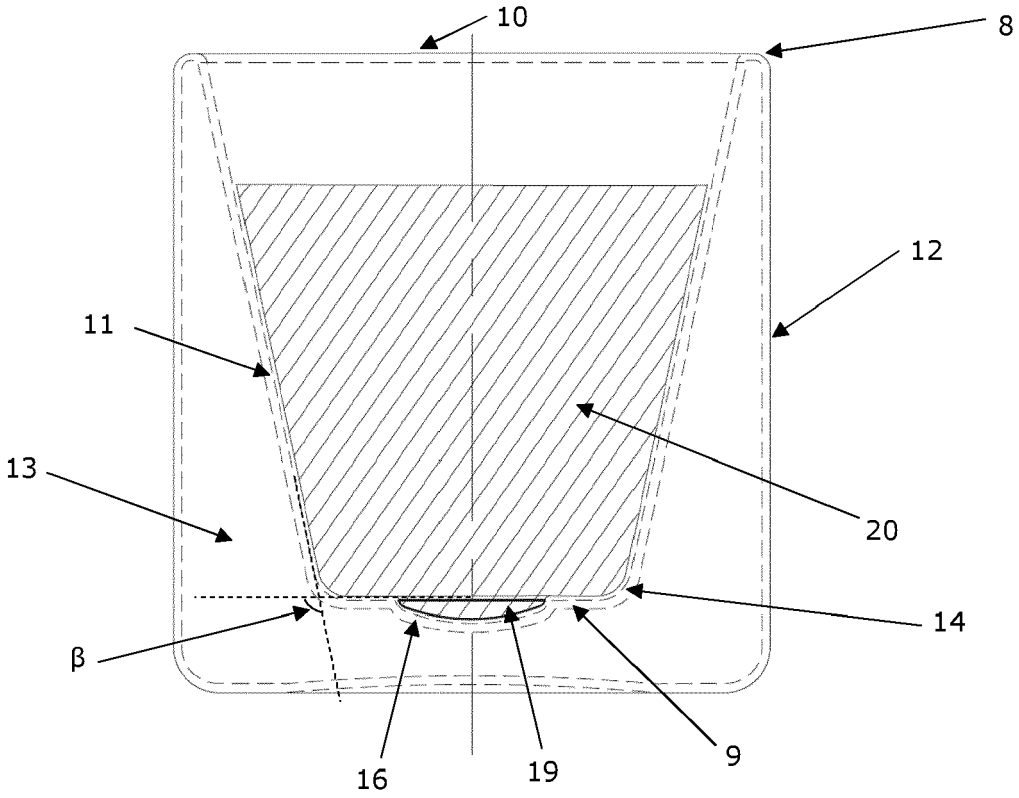

Figure 3

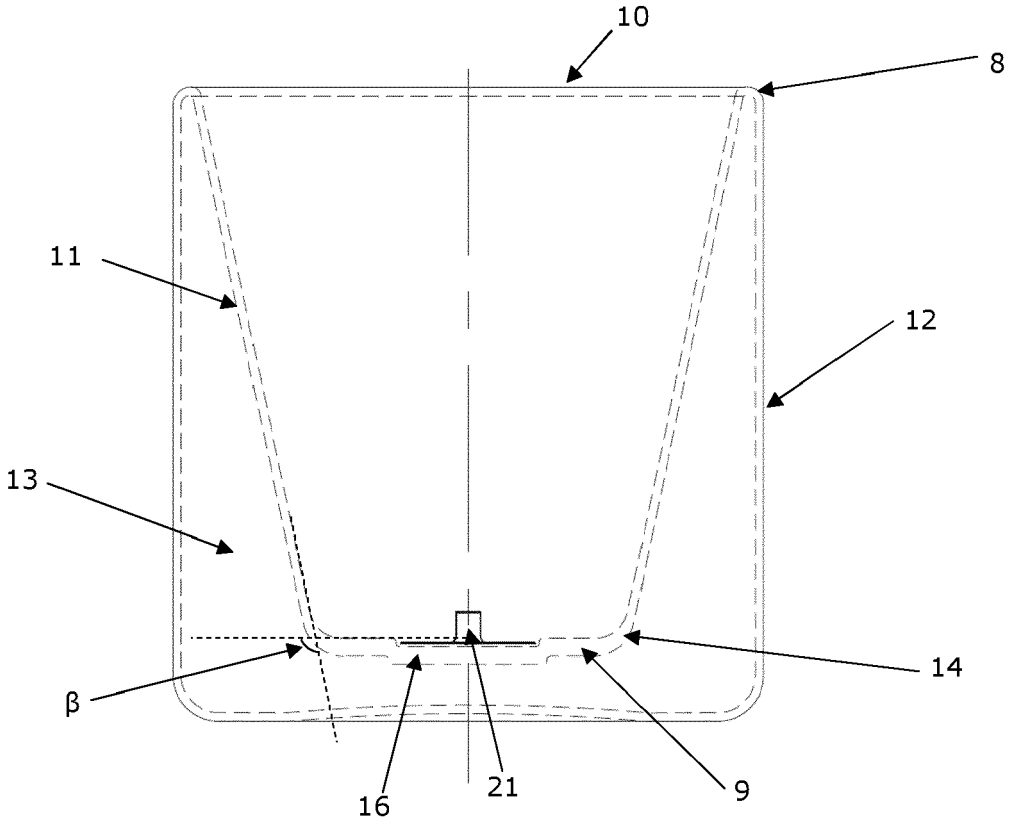

Figure 4

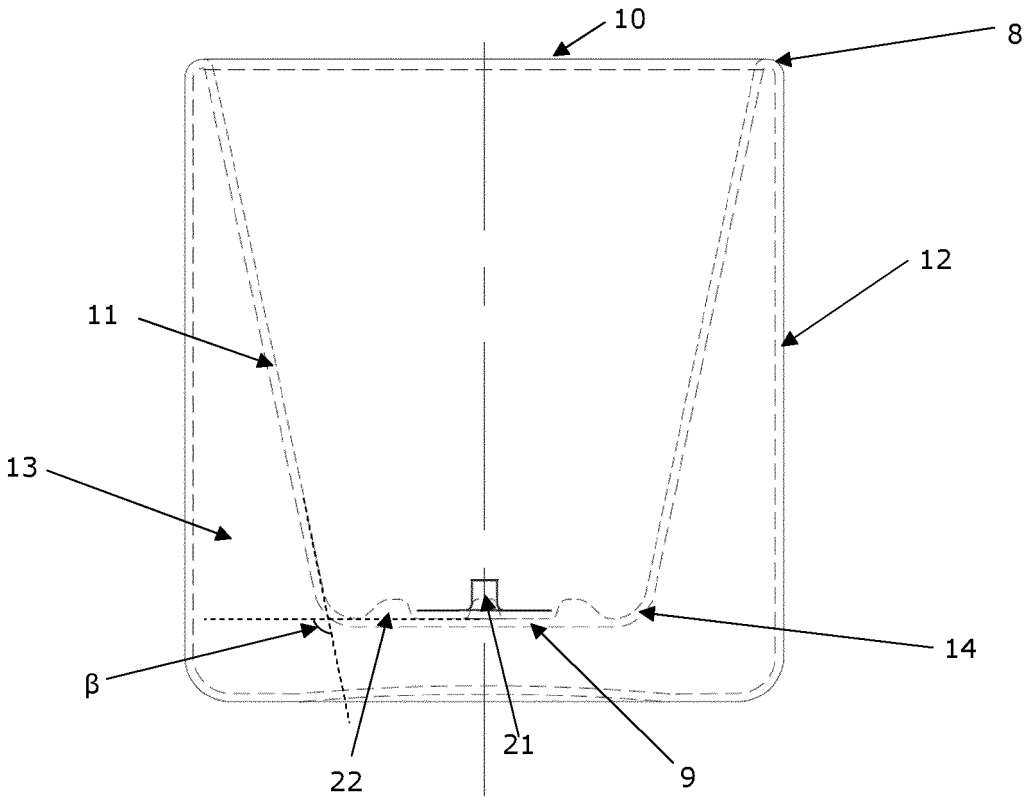

Figure 5

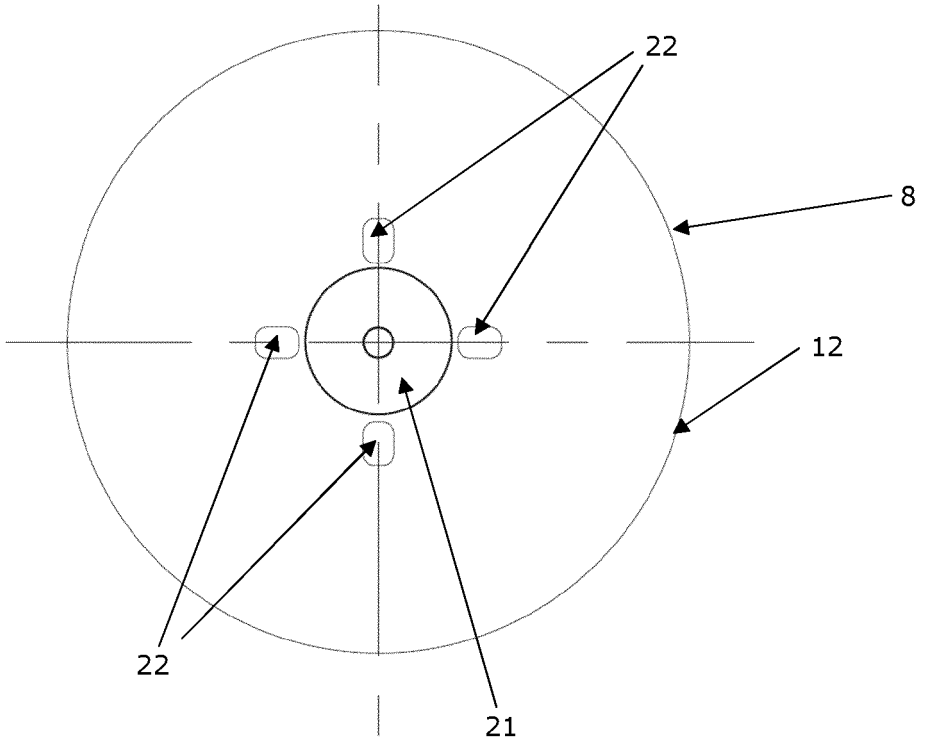

Figure 6

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EUROPEAN SEARCH REPORT

Application Number
EP 21 17 2795

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2006/079405 A1 (HENKEL KGAA [DE]; NACHTSHEIM MARKUS [DE]) 3 August 2006 (2006-08-03)	1-3,5,7, 12-15	INV. F21V35/00
Y	* page 6, line 18 - page 8, line 3; figures 1-3 *	8-11	ADD. F21V37/02 F21V25/00
X	WO 96/21124 A1 (ARCHITECTURAL STRUCTURES INC [US]; JOHANSON LARS GUNNAR [SE]) 11 July 1996 (1996-07-11)	1,4,5,7, 12-15	C11C5/00
Y	* page 5, lines 23-32 *	8-11	
X	KR 2008 0105760 A (CHA SENG YONG [KR]) 4 December 2008 (2008-12-04)	1,5,7, 12-15	
Y	* paragraphs [0031] - [0052]; figures 2-3 *	8-11	
X	DE 72 33 182 U (RHIENISCHE WACHS-INDUSTRUE OTTO JOS. MENDED & PETER PAZEN GMBH) 7 December 1972 (1972-12-07)	1,4,7, 12-15	
Y	* the whole document *	8-11	
X	US 2012/077133 A1 (CAGLE JOHN E [US]) 29 March 2012 (2012-03-29)	1,5,7, 12-15	TECHNICAL FIELDS SEARCHED (IPC) F21V C11C
Y	* the whole document *	8-11	
X	CN 203 131 440 U (SHENZHEN ZHENGDA FUBAO CULTURE COMM CO LTD) 14 August 2013 (2013-08-14)	1,6,7, 12-15	
Y	* paragraphs [0016] - [0022]; figures 1-2 *	8-11	
X	EP 2 752 619 A2 (NORRSKEN REFILL HANDELSBOLAG [SE]) 9 July 2014 (2014-07-09)	1,6,7, 12-15	
Y	* paragraphs [0023] - [0025]; figures 1a-1b *	8-11	

-/--

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 July 2021	Thibaut, Arthur

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Application Number
EP 21 17 2795

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2020/109349 A1 (KIM HAE JU [KR]) 9 April 2020 (2020-04-09) * paragraph [0044]; figures 1-2 * -----	1,2,8-15	

TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 July 2021	Thibaut, Arthur

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19-07-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006079405 A1	03-08-2006	DE 102005004295 A1	10-08-2006
		WO 2006079405 A1	03-08-2006
WO 9621124 A1	11-07-1996	EP 0828969 A1	18-03-1998
		WO 9621124 A1	11-07-1996
KR 20080105760 A	04-12-2008	NONE	
DE 7233182 U	07-12-1972	NONE	
US 2012077133 A1	29-03-2012	EP 2622275 A1	07-08-2013
		US 2012077133 A1	29-03-2012
		WO 2012050867 A1	19-04-2012
CN 203131440 U	14-08-2013	NONE	
EP 2752619 A2	09-07-2014	NONE	
US 2020109349 A1	09-04-2020	CN 110799633 A	14-02-2020
		KR 20190002982 A	09-01-2019
		US 2020109349 A1	09-04-2020
		WO 2019004737 A1	03-01-2019

EPO FORM P0459

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Patent documents cited in the description

- WO 2006079405 A **[0006]**
- WO 9621124 A **[0006]**
- KR 20080105760 **[0006]**
- DE 7233182 **[0006]**
- US 2012077133 A **[0006]**
- CN 203131440 **[0006]**
- EP 2752619 A **[0006]**
- US 2020109349 A **[0006]**