June 7, 1966 J. B. PRENTICE 3,254,512

CANDLES AND METHOD OF MAKING SAME

Filed June 17, 1960

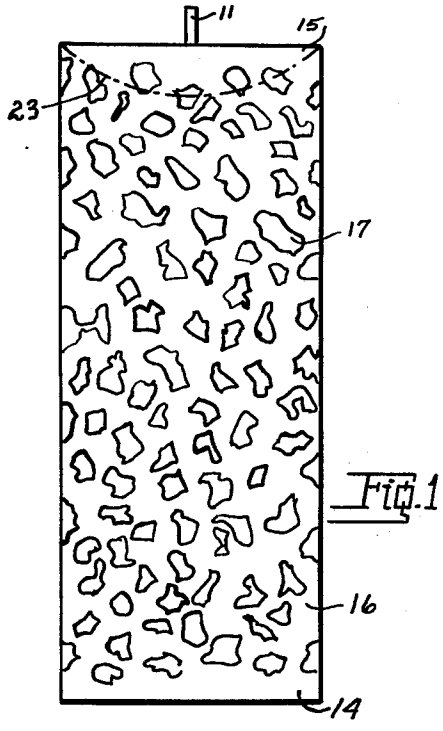


Fig. 1

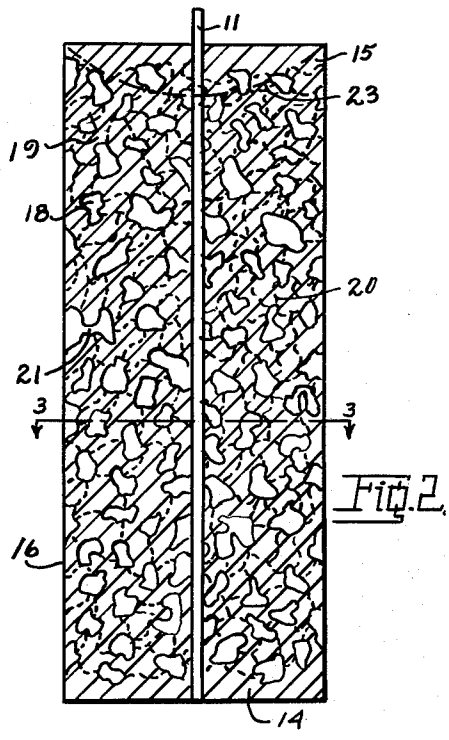


Fig. 2

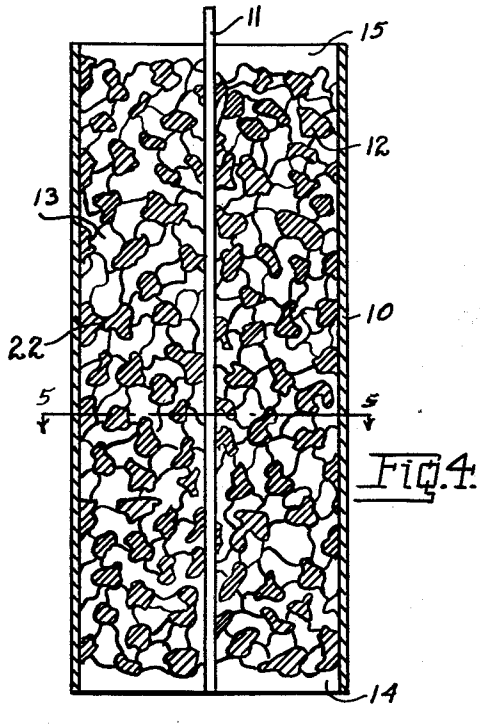


Fig. 4

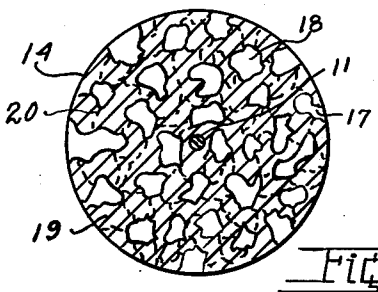


Fig. 3

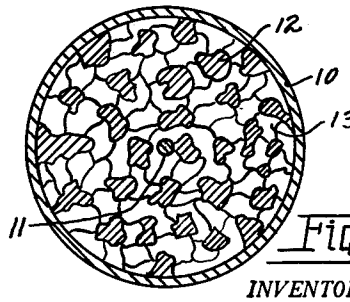


Fig. 5

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CANDLES AND METHOD OF MAKING SAME

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This invention relates to improvements in candles and method of making same, particularly to the candles of the larger sizes.

An object of this invention is the provision of a candle formed of the usual candle material which while of relatively large size is light in weight and therefore utilizes a relatively small amount of material while permitting the candle to perform its usual and normal function.

Another object of this invention is the provision of a candle which will accomplish the foregoing object but which due to its particular construction is extremely decorative in its normal appearance and when in use after being lighted.

A further object of the present invention is the provision of a candle which while giving the appearance of a large size can be produced in a minimum of time, as distinguished from the slow production of similar size candles as heretofore produced.

Another object of the present invention is the provision of an improved method of producing candles, particularly candles that fall in the class of larger decorative candles as distinguished from the purely utilitarian type of candle.

Other objects and advantages of the present invention should be readily apparent by reference to the following specification considered in conjunction with the accompanying drawings forming a part thereof and it is to be understood that any modifications may be made in the exact structural details there shown and described, within the scope of the appended claims, without departing from or exceeding the spirit of the invention.

In the drawings:

FIG. 1 is an elevational view of the improved candle of the present invention.

FIG. 2 is a vertical, sectional view of the candle of FIG. 1.

FIG. 3 is a horizontal, sectional view of the candle as may be seen from line 3—3 on FIG. 2.

FIG. 4 is a vertical, sectional view illustrating the method and mechanism employed in the production of the candle of the present invention.

FIG. 5 is a horizontal, sectional view through the mechanism of FIG. 4 as may be seen from line 5—5 on said FIG. 4.

Throughout the several views of the drawings similar reference characters are employed to denote the same or similar parts.

As was noted above the improved candle of the present invention will fall, more particularly, in the class of candles which may be designated as of the larger decorative type of candle. While the method of producing the candle of the present invention may be employed with all sizes of candles it will probably find its greatest use in the manufacture of candles of a diameter of two inches and upward and of a height of six inches and upward.

The candles, again as noted above may be formed of the usual materials such as paraffin, sometimes known as "paraffin wax," beeswax, steric acid, carnauba wax, and the like. Mixtures in various proportions of these materials are also employed in the manufacture or formation of candles.

One method of forming candles, as heretofore known, has consisted in the use of a mold for the exterior con-

figuration of the candle and after arranging a wick with respect to the mold the candle material is reduced to a fluid state by heat and poured into the mold around the wick. The candle forming materials have a melting point relatively high, particularly beeswax and carnauba wax, having a melting point of around 80° Centigrade and in candles having a diameter, or cross-section, of two inches and upward considerable time is required to permit the wax to cool and harden in the mold before it can be extracted or removed therefrom.

By the present invention, and as illustrated in FIGS. 4 and 5, the method of producing a candle consisting in utilizing a mold **10**, shown in the drawings as a cylinder open at both ends and which cylinder may be formed of any suitable or desirable material such as synthetic resins, popularly known as plastics, glass, steel, aluminum, or the like. There is then suspended substantially centrally of the mold **10** a wick **11** of the usual or acceptable material. The mold **10** is then filled with particles or pieces of ice, certain of which are indicated by the reference numeral **12**. The ice used is generally referred to as "crushed ice." The crushed ice of the present invention may be formed in any acceptable manner, as from the usual cake or block of ice, or may initially have the form of ice cubes, and which cake or block or cube is then crushed to provide smaller chunks or pieces of ice.

Obviously discretion is used in the selection of the size of the ice pieces. It has been found that ice pieces of a size that will pass through a one inch mesh screen but will be retained on a one-half inch mesh screen is preferable to produce the candle of the present invention and particularly if the candle is a diameter from two inches to three and one-half inches or more.

The candle material or wax was previously heated to the liquid or molten state and as soon as the mold **10** has been filled with the "crushed ice," ice particles or pieces **12**, the said molten wax material is poured into the mold to fill the same to the desired level around the ice particles or pieces **12**.

The crushed ice pieces or particles **12** are exceedingly irregular as to shape, size and volume but when in the mold the said particles or pieces contact and support one another, at, at least, one point. Any one or all of said ice particles or pieces may have more than one additional ice particle or piece contacting it. The molten candle material or wax while substantially completely encasing each ice particle or piece does not separate the ice particles or pieces from one another and therefore does not encase the said ice particles or pieces where it is contacting another, or other, ice particle or piece.

The ice having a natural temperature of frozen water is considerably below the temperature of the molten candle material or wax and the said ice therefore causes a relatively rapid chilling of the wax therearound, but not until the said candle material or wax has completely filled the mold, with the result that each ice particle or piece is surrounded by a thin shell of candle material or wax and the said candle material or wax between the ice particles or pieces is likewise cooled to the point that it sets up as solid material. It should be noted that this cooling and hardening of the candle material or wax is much faster than with candles formed of solid candle material or wax.

The outermost ice particles or pieces in the mold contact the inner surface thereof and this contact is not broken by the molten wax material.

As illustrated in FIG. 4 the ice particles or pieces **12** that are in the plane of the cross-section cut are cross-hatched while the surrounding ice particles or pieces,

which contact and support the said ice particles or pieces **12**, are indicated by the reference numeral **13**.

Obviously the ice particles or pieces have a tendency to melt immediately upon exposure to the atmosphere and which moisture or water descends to the bottom of the mold, it is to be understood that the time between the placing of the ice in the mold and the pouring therein of the candle material is very short, wherefore, only a small amount of moisture or water results, and this tends to cause a floating of the said ice particles or pieces but which floating is, obviously, of a very small amount, sufficient however, to permit the hot or molten candle material or wax to displace the same at the bottom of the mold so that a relatively thin bottom layer **14** of candle material or wax will result as will obviously be well understood. Similarly and by limiting the floating of the ice particles or pieces within the mold a top void-clear space **15** will likewise result.

It has been found that but a very short time need elapse between the filling of the mold **10** with the wax material and the extraction of the candle from the mold. The finished candle is illustrated at **16** in FIG. 1 and said candle has a plurality of irregular shaped openings **17** in its exterior surface. The said openings are the result of the melting of the ice particles or pieces after being encased by the candle material or wax.

Since each of the ice particles or pieces are in contact with one or more ice particles or pieces adjacent thereto at the time the molten candle material or wax is poured into the mold and since the said point or points of contact is not broken by the said candle material or molten wax the candle will have therein a plurality of irregularly shaped passageways each eventually finding its way to the outer surface of the candle, since the outermost layer of ice particles or pieces were in contact with the inner surface of the mold and which contact was not broken by the molten candle material or wax.

It should be noted that the said channels just referred to are not apertures of regular formation such that a rapidly descending channel or passageway from the wick to the outer surface of the candle results. As a matter of fact the said channels are a series of pockets having relatively minute connections with one another and at the same time the pockets have a relatively thin wall between one another and with said walls extending in all directions with respect to the wick, or the axis of the candle, or its outer surface.

The candle is illustrated in FIG. 2 in cross-section and with the spaces or pockets **18** outlined in a solid line with the candle material itself cross-hatched at **19** between said pockets. The additional but hidden pockets are indicated by the dotted lines **20** and with, as noted above, each of said pockets **18** and **20** connected with one another by a relatively minute passageway, as at **21**, for example. The passageway **21** is formed by two ice particles or pieces having line contact with one another as illustrated at **22** in FIG. 4. The resulting candle **16** of FIG. 1 is used in the same manner as a solid candle, namely, by applying flame to the exposed portion of the wick **11**. The flame, as is well known, consumes the wick and the candle material or wax by first reducing the wax to a molten state. As the wax and wick are consumed the top of the candle assumes a bowl shape such as indicated in phantom lines at **23** in FIGS. 1 and 2. Within a short time of lighting the candle the said bowl **23** is formed and from which time on the candle consumption is at a relatively slow rate. As the wick is consumed and the candle flame passes into the bowl **23** the light therefrom passes through the relatively thin partitions **19** between the pockets and thereby appears to illuminate the upper portion of the candle with a soft radiance not possible with candles of the solid variety.

From the foregoing it is believed obvious that any size of candle may be made by the present method but that the method will be found most useful in the formation of candles of the larger size, that is, candles of a size that may be supported on their own bottom without the use of a candle holder, as is necessary with the usual relatively small diameter candles. In use, obviously, and as the candle burns, channels will be opened by the flame which will be relatively shallow so that some of the molten wax in the bowl **23** will find its way to the exterior of the candle and descend along said exterior. It has been found that this adds to the attractiveness of the candle, and depending upon where the candle is placed, a receptacle or support for the candle may be desirable to prevent the said hot candle material or wax from engaging a finished supporting surface, but, normally, no resulting damage to the said supporting surfaces is effected by the candle as the molten wax is generally of a temperature that will not damage the ordinary surface.

From the foregoing it is believed now evident that there has been provided a candle and a method of producing same which accomplishes the objects initially set forth in that there has been provided a decorative candle of the larger size formed of considerably less material than heretofore used and a candle which is decorative not only in its normal condition but doubly decorative when in use and lighted.

What is claimed is:

1. A candle molded from candle material with a wick substantially centrally thereof and having an exterior surface of said candle material, and said candle having throughout its length, around its circumference and through its exterior surface and inwardly from said exterior surface a plurality of voids.

2. A candle molded from candle material with a wick substantially centrally thereof and having an exterior surface of said candle material, said candle having throughout its length, around its circumference and through its exterior surface and inwardly from said exterior surface a plurality of voids, and said candle having interior voids throughout its length and circumferentially of the wick which are between the voids of the candle through the exterior surface thereof and the wick.

3. A candle molded from candle material with a wick substantially centrally thereof and having an exterior surface of said candle material, said candle having throughout its length, around its circumference and through its exterior surface and inwardly from said exterior surface a plurality of voids, said candle having interior voids throughout its length and circumferentially of the wick which are between the voids of the candle through the exterior surface thereof and the wick, and said voids adjacent one another vertically and transversely of the candle being connected at points outwardly of the wick but inwardly of the candle exterior surface.

4. A candle molded from candle material with a wick substantially centrally thereof and having an exterior surface of said candle material, and said candle having throughout its length and circumferentially thereof between its wick and exterior surface a plurality of promiscuously positioned pockets joined with one another at points between the said wick and said candle exterior surface, and with certain of said pockets connected with the atmosphere through the exterior surface of the candle.

References Cited by the Examiner

UNITED STATES PATENTS

2,085,052	6/1937	Taylor	18—48
2,103,237	12/1937	Deckert	18—58
2,291,680	8/1942	Billner.	
2,474,201	6/1949	Raymond et al.	18—53
2,481,019	9/1949	Joyce	67—22
2,541,725	2/1951	Sundell	67—22
2,859,604	11/1958	Hallum	67—21
2,941,256	6/1960	Stoerker	18—58

(Other references on following page)

FOREIGN PATENTS

21,037 2/1883 Germany.

OTHER REFERENCES

German printed application No. 1,016,395, printed 5 September 1957.

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