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[56] **References Cited**
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Primary Examiner—Carroll B. Dority, Jr.

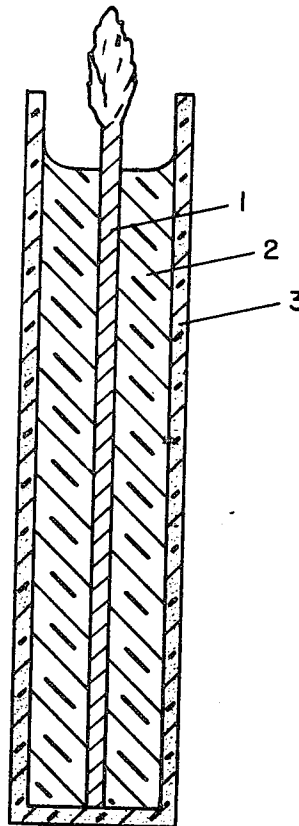
[54] **COLORED FLAME CANDLE**
 1 Claim, 2 Drawing Figs.

[52] U.S. Cl..... 431/126,
 431/288

[51] Int. Cl..... F23q 2/32

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 126

ABSTRACT: A candle which burns with a colored flame. The candle has an inner body of solid combustible material, through which extends a wick. The inner body is coated with a higher melting temperature combustible material. Into the outer coating is incorporated a material, which, when exposed to the heat of the flame, yields a flame of a desired color.



1-WICK
 2-INNER BODY
 3-OUTER COATING

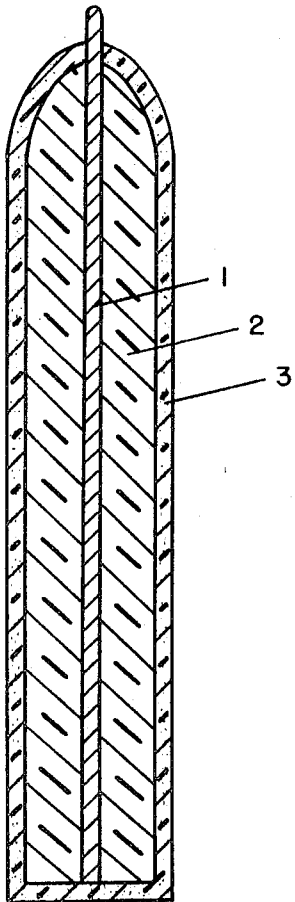


FIG. 1

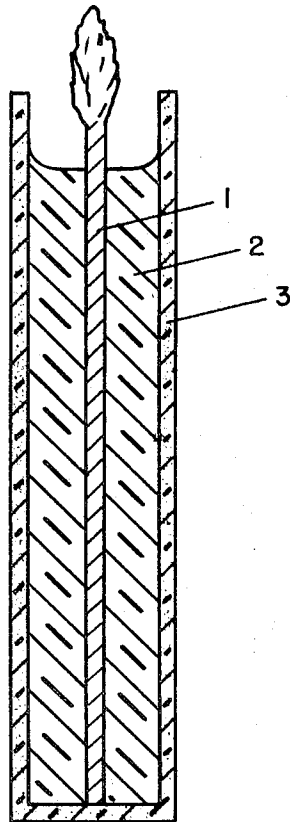


FIG. 2

1-WICK
2-INNER BODY
3-OUTER COATING

*Raymond A. Kelley
Jan 11, 1971*

COLORED FLAME CANDLE

This invention relates to a candle which burns with a bright and clear color in the flame, the color depending upon the material used in its production. We do not claim that the nature of the color-producing material is new; in fact it can be one of many of the same metallic and/or nonmetallic compounds which have been described in previous patents on candles which burn with various colored flames. What we claim to be new, and the reason for the distinctly superior performance of this candle over any previously described, is the position of the color-producing material in the candle.

FIG. 1 is a vertical section of the candle.

FIG. 2 is a vertical section of the candle showing the outer coating held in the flame area.

Candles described previously have had the color-producing material incorporated by various means into either the wick or into the body of the candle. We have found that the flame color generated under these conditions is weak and pale. The problem is that the temperature to which the chromogenic material is exposed is too low to produce a satisfactory color. However, the temperature at the bottom outer boundary of the flame is greater than the temperature at points along the wick or where the body of the candle is molten. Chromogenic agents are capable of producing truly brilliant colors only at the higher temperatures which exist above the body of a normal candle—on the boundary of the flame. In our invention, the color-producing material is placed in an optimal position in the flame in the following way: a candle is produced by any of the modes of manufacture utilizing any of the materials of candle production, then either sprayed with or dipped into a resin, plastic or other material (FIG. 1) which has a melting point such that the outer surface of the candle remains near a

very hot portion of the flame forming a deep cup, the rim of which is on the boundary of the flame (FIG. 2). Alternatively, the color-producing material may be incorporated into the outer coat resin, plastic or other material and the two processes accomplished in one step. In this way the color-producing material is raised to a far higher temperature than that which obtains at points along the wick or where the body of the candle is molten. Excitation of the molecules of the color-producing materials at this higher temperature results in a strong color, superior to that which a lower temperature can produce.

Materials which may be suitable for use in the outer coating include Polyamide Resin from Emery Industries, Inc., Biwax from Alexander Saunders and Company, Inc., Thermoplastic Polyamide Resin from General Mills, Inc., High Temperature Wax from Kindt-Collins Co., Neolyn and Pentolyn from Hercules Inc., Nylon 12 from Olin Mathieson Chemical Corporation, Amberol from Rohm and Haas Co., and Piccolastic from Pennsylvania Industrial Chemical Corporation, but we intend that the materials listed above are only examples and that our invention is not to be restricted to only these materials.

Candles of various sizes can be produced which function equally well by varying the size of the wick, the outer coat and the body of the candle.

We claim:

1. A candle including an inner body of solidified combustible material and a wick extending therethrough; said inner body of solidified fuel having an outer coating of a higher melting point combustible material than said inner body of fuel, and said outer coating of material having incorporated therein a material which produces a flame of a desired color.

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