

May 11, 1926.

J. E. ROSENBERG

1,583,798

ARTIFICIAL CANDLE

Filed Feb. 10, 1925

FIG. 1.

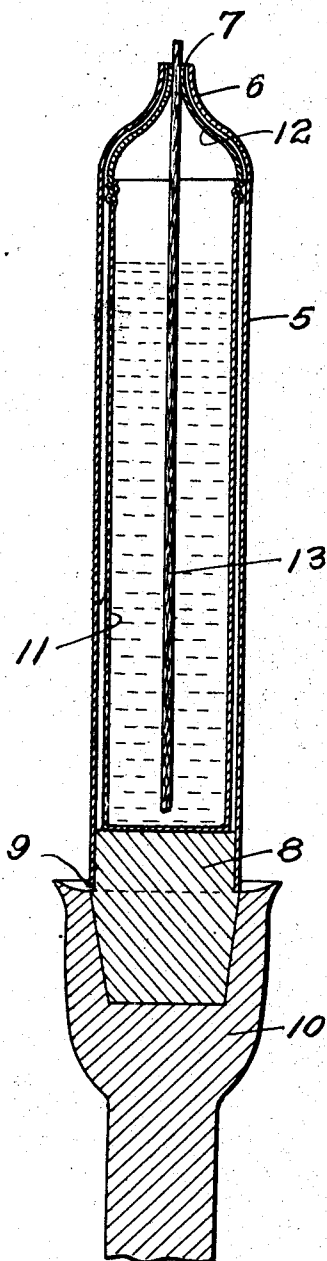


FIG. 2.

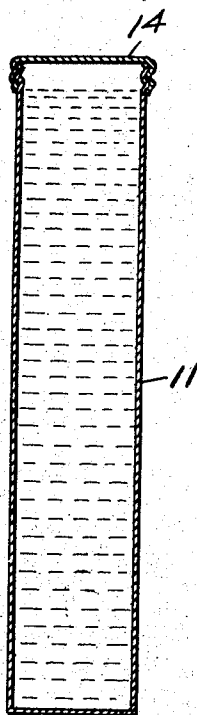
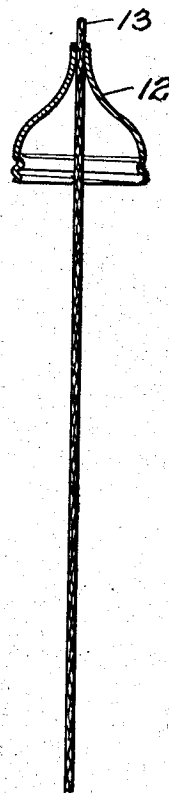


FIG. 3.



WITNESSES

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Patented May 11, 1926.

1,583,798

UNITED STATES PATENT OFFICE.

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ARTIFICIAL CANDLE.

Application filed February 10, 1925. Serial No. 8,120.

This invention relates to artificial candles and more particularly to artificial candles which are adapted to burn a liquid fuel.

An object of this invention is to provide a candle of the type set forth having a permanent body formed in the shape of an ordinary candle which can be decorated or colored in any desired manner and which is adapted to be used in any ordinary candle stick.

A further object is to provide an artificial candle of the type set forth adapted to receive a fuel container or cartridge which can be easily replaced by a fresh container when the fuel therein is exhausted.

A still further object is to provide a liquid fuel which is particularly adapted for use with an artificial candle for the purpose of providing a colored flame.

A still further object is to provide an artificial candle of the type described which will be cheap to manufacture, durable in construction and easy and simple to use.

These and other objects which will be apparent to those skilled in this particular art are accomplished by means of this invention, one embodiment of which is shown in the accompanying drawings, in which Figure 1 is a vertical transverse section through a device, showing one form of this invention. Fig. 2 is a similar view of a replaceable fuel container or cartridge which is adapted to be used in conjunction with the candle shown in Fig. 1; and, Fig. 3 is a similar view of a wick supporting nozzle adapted to be secured to the fuel container.

The particular embodiment of this invention which has been chosen for the purposes of illustration includes a hollow body member 5 which is preferably formed of one piece and has the upper end thereof shaped to form a candle tip 6, having a central opening 7 in the end thereof. The body member can be made from any desired material such, for example, as metal, or glass or the like. It is adapted to be decorated in any desired manner and forms a permanent artificial candle.

In order to adapt the rigid body member 5 to various sized candle sticks, a plug 8 of some such pliable material as rubber, cork, or the like, is inserted in the lower open end of

the hollow body member and has a tapered cross section similar to the bottom of an ordinary candle so that it will fit in various sized candle sticks. A shoulder 9 is provided to engage the end of the body member 5, and the assembled elements are preferably inserted in the candle stick 10 a sufficient distance to completely hide the plug 8 in order to complete the resemblance of the device to the ordinary candle.

Where the outer body member is formed of metal or some material which will not be injured by the heat of the flame, the fuel can be placed directly within the body member and the wick inserted in the opening 7 thereof. However, I preferably provide a replaceable fuel containing cartridge 11 which is adapted to be inserted within the body member and supported upon the end plug 8. A nipple shaped member 12 provided with a wick 13 is adapted to be threaded or otherwise secured to the top of the cartridge in place of the ordinary cover 14 which comes upon the latter and the end of the nipple extends through the opening 7 of the body member in order to protect the latter from the heat of the flame, when the latter is formed of glass or other material which might be injured thereby.

When the fuel is exhausted the cartridge is removed and the nipple 12 secured to a fresh cartridge which can be easily inserted within the body member whose end is then closed by the resilient plug 8. The device forms a permanent artificial candle which can be used in any desired candle stick.

While any form of fuel may be used the most desirable is a fuel which will burn with a colored flame. In order to provide a liquid fuel which will burn with such flame it is first necessary to provide a fuel which itself burns with a colorless flame such, for example, as methanol. I have found that a flame of any desired color can be produced by dissolving in such a solvent a salt which will impart the desired color to the flame. In such a case the color of the flame is due to the presence of the volatilized salt in the otherwise colorless flame of the liquid.

It is well known that an alcoholic solution of borax will burn with a green flame. The

color of the flame will not be very intense, unless the alcohol and the borax are first warmed together, preferably in the presence of sulphuric acid. In this case the color is
5 due to the combustion of ethyl or methyl borate, formed by the reaction of boric acid and the alcohol, and not to the presence of a volatilized salt as is the case with this invention.

10 The concentration of the salt in the fuel must be such that it is volatilized in the flame at the same rate that the fuel is consumed. Otherwise the salt will deposit in the top of the wick and prevent the latter from
15 properly functioning. The exact concentration depends somewhat upon the size of the wick. For example a concentration of approximately .5% of LiCl in methanol will burn with a red flame. Other salts which
20 may be used either separately or in the same solution are those of sodium, potassium, rubidium, cesium, calcium, strontium, barium, copper or thallium. Since very little of the salt is required the solubility of
25 all these in methanol, for example, is sufficient for the production of a colored flame, the color of which depends upon the salt used. The solvent or fuel may, as above
30 pointed out, be of any single liquid or liquid mixture which burns with a colorless flame. This is essential because if the flame is luminescent its color will mask the color imparted by the volatilized salt. The salt must
35 be dissolved and not suspended in order that it will be drawn up the wick with the liquid fuel.

What I claim as new and desire to secure by Letters Patent is:

1. An artificial candle having in combination a hollow body member provided with
40 an open lower end and an upper end shaped to form a candle tip having an opening therethrough, a removable fuel cartridge adapted to be inserted through the lower end of said body member and provided with a
45 wick supporting extension projecting through the opening in said tip, a wick supported therein and a removable resilient plug in the lower end of said body member forming a base therefor and adapted to support
50 said cartridge with its extension in predetermined spaced relation to said candle tip.

2. An artificial candle having in combination a hollow candle shaped body member provided with an open lower end and an
55 upper end shaped to form a candle tip having an opening therethrough, a removable fuel cartridge adapted to be inserted through the lower end of said body member and provided with a separable wick supporting extension projecting through the opening in
60 said tip, a wick supported therein and a removable resilient plug in the lower end of said body member forming a base therefor and adapted to support said cartridge with
65 its extension in predetermined spaced relation to said candle tip.

In testimony whereof, I have hereunto subscribed my name this 6th day of February, 1925.

JACOB E. ROSENBERG.