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METHOD OF EMBOSSING SUGARY SUBSTANCES

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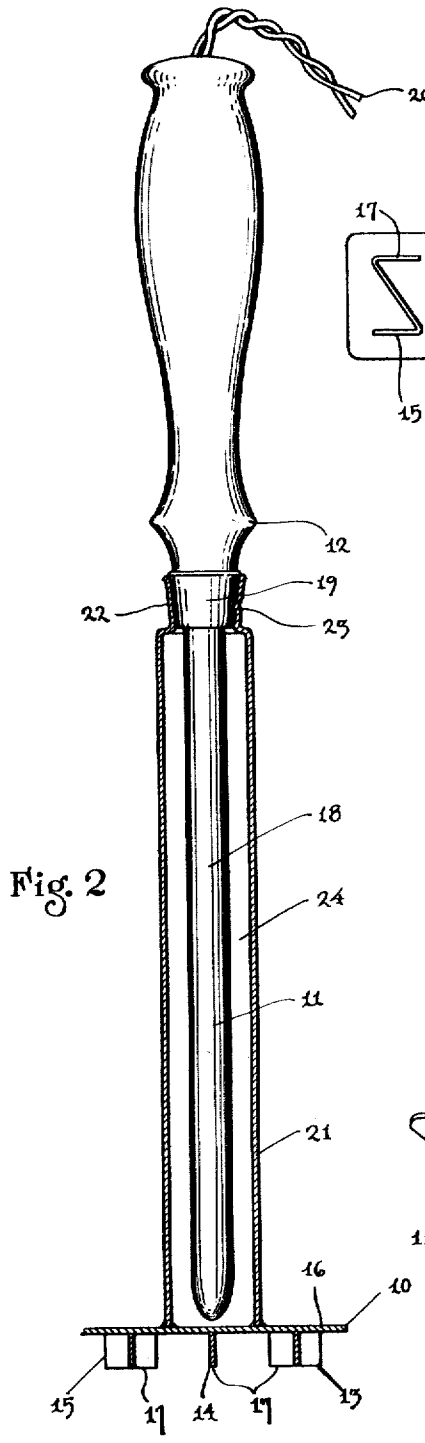


Fig. 2

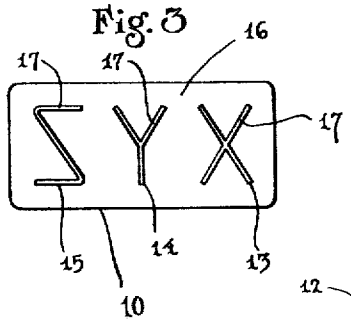


Fig. 3

Fig. 1

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METHOD OF EMBOSSING SUGARY SUBSTANCES

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6 Claims. (Cl. 107—54)

My invention relates to method of and apparatus for forming embellishments upon the surfaces of sugary and like substances commonly employed as coatings, icings, or frostings for candy, pastry and the like.

An object of the invention is to provide a method and apparatus particularly, though not exclusively, for embossing the surfaces of coatings for candy bars.

More particularly it is an object of the invention to provide a method of embossing such coating substances which consists in treating the same while in a heated fluid state, such treatment constituting the application of heat to the surface of said substances at a higher temperature than that of the substance itself, at defined localities thereon.

An object of the invention resides in providing an apparatus for use in carrying out the method of my invention.

Another object of the invention resides in constructing the apparatus with a die having portions for engagement with the surface to be embossed formed in relief thereon and in providing a heater adapted to maintain said die at a proper temperature.

Another object of the invention resides in providing a conducting member conductively connected to said die and disposed in spaced relation with respect to said heater to leave an air gap between said member and heater, whereby a relatively lower and relatively non-fluctuating temperature may be maintained at said die.

A still further object of the invention resides in providing an elongated heater and in providing a tubular conducting member arranged to envelop said heater.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of an embossing apparatus or device illustrating an embodiment of my invention.

Fig. 2 is a longitudinal sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is an end elevational view of the die of the invention shown in Fig. 1.

In so far as I am aware, it has been impossible heretofore to form embossed embellishments on coatings, icings, frostings and like substances without casting the substances in molds to form such embellishments or without applying additional coating material, in a separate operation, to the surface to be embellished. My invention provides a method and apparatus whereby the surface may be embossed to provide embellishments in relief in an extremely simple and expeditious manner.

For the purpose of carrying out my invention, I employ an embossing device which has been illustrated in detail in the drawing. This device comprises a die 10, a heater 11 and a handle 12 for supporting the die and heater in proper relation to one another. The die 10 may be constructed in any suitable manner. For the purpose of illustration, the die has been shown as constructed with a base 16 and a number of surface engaging members issuing outwardly therefrom, these members are illustrated as three letters X, Y and Z, indicated at 13, 14 and 15. These parts may be constructed in any suitable manner. In the form of the invention shown, the base 16 is constructed of sheet metal and the various letters 13, 14 and 15 are also constructed of sheet metal and soldered to the base 16. It can readily be comprehended, however, that the die may be constructed integral as by casting or from a solid block cut away to leave the desired projections thereon. The die 10 is so constructed that the edges 17 of the various letters 13, 14 and 15 lie in a common plane. These edges serve to form the embellishments on the candied coating when the device is used in accordance with the method of my invention, which will be presently described in detail.

The heater 11 may be an electrical heater consisting of a suitable coil of resistance wire, not shown, which is encased within a tubular case 18. This case is directly attached to the handle 12 in any suitable manner, in a ferrule 19 encircling said handle at one end, serving to hold the case 18 and the heater securely attached to said handle. The handle 12 is preferably hollow so that a cord 20, connected to the heating coil, may extend therethrough and be connected to any suitable source of electrical energy.

The base 16 of the die 10 has attached to it, a tubular member 21 considerably larger in diameter than the case 18 of heater 11. This tubular member encircles the heater 11 and is formed at one end with a neck 22 reduced in diameter and adapted to fit over the ferrule 19 on handle 12. By means of indentations 23 formed in said neck and in the ferrule 19, the tubular member 21 is held rigidly attached to handle 12. It will be noted in Fig. 2 that the case 18 of heater 11 is centrally disposed within the tubular member 21 and is spaced therefrom throughout its ex-

tent. By means of this construction, an air gap 24 is formed in the heat conducting circuit between the heater and the die, whereby the temperature of the die may be relatively constantly maintained at a temperature considerably lower than that of the heater proper.

In carrying out the method of my invention, the following steps are employed. The coating substance to be embossed is applied, as usual, at a temperature in excess of 85° Fahrenheit and while it is in a fluid or semifluid state. The embossing device A is previously brought up to a temperature of between 90° and 120° Fahrenheit and so maintained. While the substance to be coated is at a temperature between 85° and 100° Fahrenheit and is still in a more or less fluid form, the embossing device A is brought into use by bringing the surface 17 of the letters 13, 14 and 15 thereof into momentary contact with the surface to be embossed, and is then withdrawn. Those portions of the coating substance heated by the die swell or fluff up with the result that an embossed embellishment is formed on the surface of the coating in conformity with the contacting portion of said die. Thereafter and as the coating is allowed to cool and become set, the embossed embellishments retain their shape. Due to the temperature of the die, which is slightly above that of the coating substance, the die frees itself very readily from such substance, leaving the contacting portions of the die clean and in a condition to be repeatedly used without cleaning or other attention.

The air gap 24 between the heater 11 and the sleeve 21 from which the die 10 receives its heat, readily allows the keeping of the temperature of the die within the desired limits. Obviously, a thermostat may be employed in regulating the temperature of the heater, but whether the temperature of said heater is kept within bounds automatically or otherwise, the air space 24 serves to minimize fluctuations of temperature in the die.

I have found in repeated experiments that the temperatures best suited to the purpose are fairly critical and that satisfactory results cannot be obtained if the temperature of the coating or of the embossing device vary appreciably from the temperatures specified. When the temperature of the die is too low, the coating substance tends to adhere to the die and, as a result, sections of the coating are often removed with the die when it is withdrawn. And in such case, if the coating remains, the embellishments are undesirably formed therein in intaglio rather than in relief.

My invention is particularly useful in forming the coatings of the present character with ornamental embossing and may be used advantageously in forming trade-marks or similar markings upon such coatings.

My invention is highly advantageous in that the embellishments may be easily and quickly formed upon the surface to be embossed. The embellishments can be made extremely attractive in appearance and are readily visible. No injury is done to the substance treated nor is the taste or palatability of the substance altered. No additional substance is required to be added to the surface to be embellished. The method is extremely simple and when the temperatures are properly controlled, can be repeatedly carried out. The apparatus likewise is extremely simple in construction, and will operate indefinitely without appreciable attention.

Changes in the specific form of my invention as herein disclosed may be made within the scope of what is claimed, without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. The method of embossing a coating substance of the character described, which consists in applying heat to such substance at defined localities upon the surface thereof, while said substance is in a heated plastic state, such application of heat being at a temperature greater than that of said substance.

2. The method of embossing a coating substance of the character described, which consists in momentarily applying heat to such substance at defined localities upon the surface thereof, while said substance is in a heated plastic state, such application of heat being at a temperature greater than that of said substance.

3. The method of embossing a coating substance of the character described while the same is above its normal temperature, which consists in applying heat at a temperature greater than that of the substance at defined localities at the surface of said substance.

4. The method of embossing a coating substance of the character described while the same is hot, said method consisting in applying heat at a temperature substantially ten degrees Fahrenheit higher than that of said substance to the surface thereof at defined localities thereon.

5. The method of embossing a coating substance of the character described while in plastic form and at a temperature between 85° and 100° Fahrenheit, said method consisting in applying heat at a temperature between 90° and 120° Fahrenheit to the surface of the substance at defined localities thereon.

6. The method of uniformly raising the surface of a sugary substance which consists in raising the temperature of said substance at the surface thereof to a degree sufficient to produce plasticity of the substance, and in momentarily applying heat to such substance at defined localities thereof while said substance is at such temperature, such application of heat being at a temperature sufficient to produce fluidity of the substance.

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