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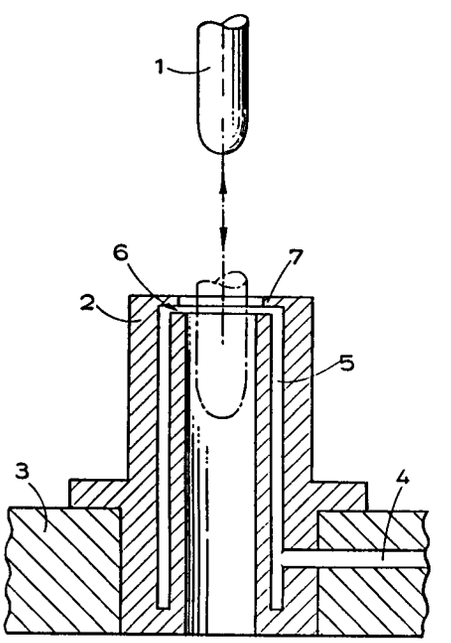
(54) Treatment of cosmetic and like sticks.

(57) The gloss is imparted to a lipstick or similar cosmetic stick not by the so-called «flaming» process but by passing the stick axially through an inwardly directed ring or curtain of heated air.



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TREATMENT OF COSMETIC AND LIKE STICKS

This invention relates to the surface-finishing of cosmetic and like sticks of pasty material, in particular lipsticks, although it may be applied to sticks of other materials, for example lip salves.

It is well known that a lipstick, when initially formed by moulding or casting, may have a dull appearance and this can be transformed by so-called 'flaming', which imparts an attractive glossy appearance to the surface of the mass. This flaming or flame-polishing involves passing the stick momentarily through a flame from a gas burner, sufficient to melt the surface. It will be appreciated that it is a somewhat tricky operation to achieve the necessary melting all over the surface without overheating and possibly distorting some parts of the stick. The process therefore needs careful watching but is regarded as unavoidable in view of the enormous improvement in the appearance of the stick that it achieves.

Attempts have been made to achieve the same result in other ways, for example by the use of radiant heat. However this has not proved satisfactory and simply does not achieve the same gloss. Such a process, using infra-red heaters, is disclosed in British Patent Specification No. 755,549. Also suggested there is the use of a gas/air flame to provide the radiant heat.

Hot air has been tried but passing a line of lipsticks through a region of air at a high temperature, or through jets of hot air, does not produce a gloss at all; it simply leaves the surface

dull, even when the heat input has been sufficient to melt the surface.

The invention is based on the unexpected discovery that it is after all possible to produce the desired gloss by the use of hot air, provided it is done in the right way.

According to the invention cosmetic sticks, e.g. lipsticks are polished by causing the stick to pass, in a movement along its axis, through a ring of inwardly directed hot air that momentarily heats each annular portion of the stick in turn as it passes through the heated air. It will be understood that the stick could be axially fixed while the ring of inwardly directed hot air traverses its length, but preferably the air supply is fixed and the stick is moved through it. For example the ring could be in a horizontal plane and the sticks are brought in turn into line with the axis of the ring and then briefly dipped into it and retracted.

Surprisingly, hot air used in this way does produce a satisfactory gloss. The ring of inwardly directed air may be formed by individual radial jets but preferably emerges from a straightforward single annular nozzle fed with air passed through an electric heater. The air may flow radially, or be given a degree of tangential twist, and in either case its pressure can be very low, as the total quantity of flow needed is small.

The invention will now be further described by way of example with reference to the accompanying drawing which is a diagrammatic illustration of one possible form for the apparatus required.

The apparatus according to the invention is incorporated as a single stage in any known system for moulding lipsticks in or out of their containers, for example the known Ejectoret system, in which a line of containers is advanced intermittently and molten lipstick mass is poured into a mould through the base of each container in turn, the mould being subsequently removed and the container mechanism being operated to cause the now-solidified lipstick to project downwards from it. However, the invention could be equally well applied to those systems in which the lipstick is cast separately and then inserted in the container.

The one essential requirement is that it should be possible to bring the solidified lipstick, either projecting from the container in which it was formed or held in another manner, to the station at which the apparatus according to the invention is present, and then to cause relative axial movement.

The lipstick mass is shown at 1. In the example shown it is pointing downwards. The heating apparatus comprises a double-walled hollow cylinder 2 mounted in a heated block 3 in which there is an internal passage 4 leading into the annular space 5 between the two walls. Hot air, heated by its passage through the block (which may itself be heated by any convenient means such as a flame or an electric element) enters the annular space 5, flows upwards, and then emerges in a radially inwardly directed jet from an annular slot 6 between the top end of the inner wall and an inturned lip 7 at the top end of the wall. This effectively forms a continuously present horizontal inwardly directed curtain of hot air. The lipstick 1 is brought into alignment with the cylinder 2 and then moved down axially to enter it, each part of the surface of the

lipstick therefore passing in turn through the horizontal curtain of air. The temperature of the air, its rate of delivery, and the speed with which the lipstick is moved through it are readily determined by trial and error to impart the required gloss or polish to its surface. As indicated earlier, the mere exposure of the whole of the lipstick at once to heated air does not produce a gloss and it was unexpected that this progressive exposure of each successive annular portion in turn should be successful in doing so.

Although in theory it is necessary to pass the lipstick through the curtain of hot air only once, the only practical way of handling it is to retract it after it has passed through, so the majority of the length of the lipstick is heated twice. Each part of its surface in turn melts momentarily and re-hardens to a fine glossy finish.

The mechanism for moving the lipstick axially into the cylinder is not shown as it can be part of the general system for feeding a succession of lipsticks in the process of manufacturing them.

Although the cylinder has been shown as being stationary, with the lipstick moving vertically downwards into it, it will be understood that the result could be achieved equally well by moving the lipstick upwards or by moving the cylinder and leaving the lipstick stationary if the nature of the overall system makes this easier. Moreover, the movement could be in any attitude, e.g. horizontal.

It will be appreciated that this process is particularly suitable for automatic continuous

operation as part of an overall manufacturing process and it is found to achieve results as good as those obtained by the known flame-polishing but without the obvious problems associated with the handling a naked flame.

CLAIMS

1. A method of imparting a gloss finish to the surface of an elongated stick of cosmetic material comprising causing the stick to pass in a direction along its axis, in relative movement through a ring of inwardly directed hot air that momentarily heats each annular portion of the stick in turn as it passes through the ring.

2. The method according to claim 1 in which the stick is passed through the ring of hot air and then withdrawn in the opposite direction.

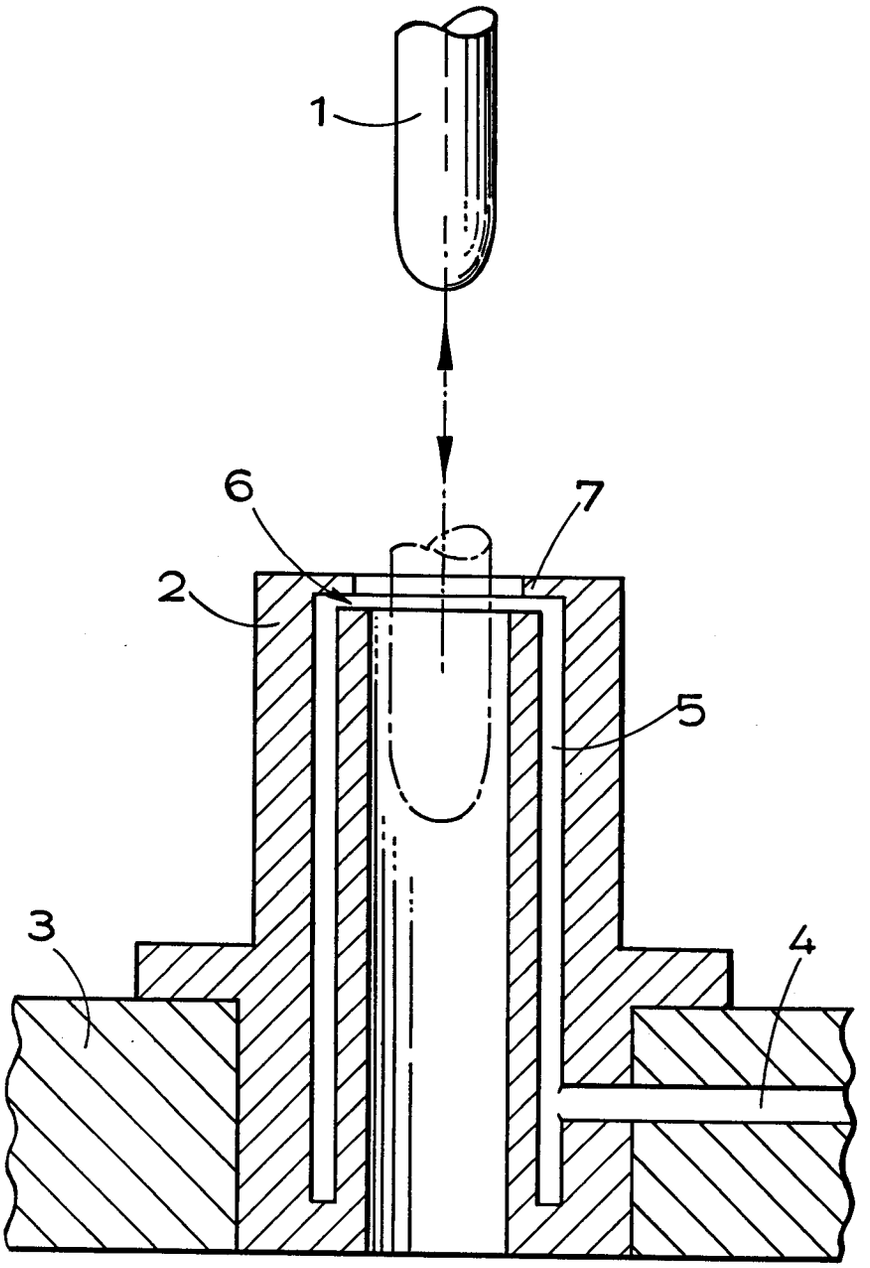
3. The method according to claim 1 or claim 2 in which the ring of hot air is axially stationary and the relative movement is solely that of the stick.

4. The method according to any one of claims 1 to 3 in which the ring of air is a circumferentially continuous ring emerging from an annular slot.

5. Apparatus for carrying out the method of any one of claims 1 to 4 comprising a hollow cylindrical body with at least one open end and an annular slot in its inner face, and means for feeding heated air to that slot under pressure, and means for causing relative axial movement between the cylinder and an elongated cosmetic stick such that each annular part of the surface of the stick is caused to pass the slot in turn.

6. Apparatus according to claim 5 in which the slot is adjacent the said open end of the cylinder.

7. Apparatus according to claim 5 or claim 6 in which the cylinder is mounted in a block which is heated and through which the air passes.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