Form A (9/77)
Philip Morris USA

Date: 11 October 1988

PM #: 1345

5-11-89

Alan Smith
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INVENTION RECORD

TO: Patent Counsel

Preliminary Disclosure for Consideration of Patentability

1. DESCRIPTION OF THE INVENTION (in sufficient detail for the invention to be understood; please identify or attach copies of any reports, notebook pages, or other documents containing particular examples or other pertinent data):

This invention relates to an electrically heated smoking device in which a cylindrical heater surrounds a substrate-holding highly conductive can, and is surrounded with a gap and an insulating cylindrical sleeve, such that incoming air drawn in with a puff is preheated by the cylindrical heater before it enters the substrate-holding can (See attached Figure 1). The cylindrical heater is maintained at an optimum essentially constant temperature. An optional second heater located in the center of the substrate bed can be elevated in temperature at some time before and/or during the time a puff is taken. Alternately, the energy provided to the cylindrical sleeve heater can also, or instead of using an internal heater, be increased just prior to and/or during the puff. The air flow pattern of the smoking device is such that by preheating the air drawn in for the puff, the temperature drop of the aerosol forming substrate is reduced. Incoming puffing air also acts to cool the article exterior surface when the air enters and flows through the air gap between the cylindrical heater and the article exterior wall. The gap between the cylindrical heater and the outer sleeve works as a good insulator between the puffs.

2. OBJECTS/ADVANTAGES OF THE INVENTION: The object of the invention is to deliver an optimum aerosol with the least amount of total energy input. Advantages of the invention are:

1. The air gap is an insulator to minimize article exterior surface temperature and power loss. The air flow pulled through the gap during puffing helps to cool the article exterior surface. Incoming puffing air is warmed before entering the aerosol generator to minimize cooling of the aerosol forming substrate during puffing.

2. A center heater which can be pulsed with energy before or during a puff serves to minimize total energy requirements since the cylindrical sleeve heater can be operated at a lower temperature than would be required without the internal heater. Alternately, the energy to the cylindrical sleeve heater can be pulsed prior to or during the puff in cases where the center heater is not used.

3. STATE OF THE ART (list any known patents or publications that seem pertinent):

EPO 0277519A2

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4. HAS THERE BEEN A DISCLOSURE OF THE INVENTION TO ANYONE OUTSIDE THE COMPANY? IF SO, EXPLAIN. No.

Submitted by: Constance D. Hayes

Location: M.R. Hajaligol

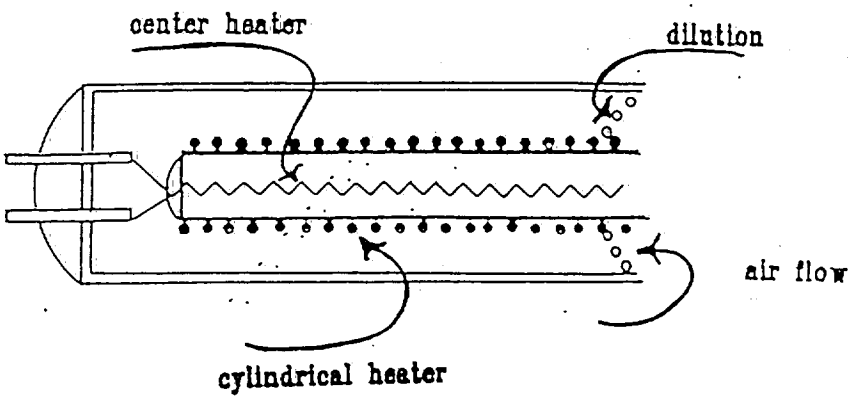

figure 1

1) Drawings

2) prefered materials