

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:)
U.S. Patent No. 9,901,123)
Issued: February 27, 2018)
Application No.: 15/286,087)
Filing Date: October 5, 2016)

For: **Tobacco-Containing Smoking Article**

FILED VIA E2E

**DECLARATION OF STEWART FOX IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,901,123**

TABLE OF CONTENTS

I. Introduction and Qualifications 1

II. Summary of Materials Reviewed and Considered 3

III. Level of Skill in the Art and Perspective Applied in this Declaration 6

IV. The '123 Patent 7

 A. Background and Background Description..... 7

 B. The Ruyan Devices and “E-CIG” 10

 C. Description – The Described Embodiments..... 21

 1. Figure 1’s embodiment..... 22

 2. Figure 2’s embodiment..... 30

 3. Figure 3’s embodiment..... 32

 4. Control and Sensing (Figures 4 and 5)..... 34

 D. The Claims 36

V. Claim Construction 38

VI. Understanding of Legal Principles Relevant to Obviousness..... 38

VII. Summary of Primary Prior Art References..... 40

 A. Chinese Patent No. CN 2719043 (“Hon,” Ex. 1005) 40

 B. U.S. Patent No. 4,947,874 (“Brooks,” Ex. 1006)..... 43

 C. U.S. Patent No. 2,057,353 (“Whittemore,” Ex. 1007) 46

VIII. Claims 1, 2, 5, 7, 9, 11, 12, 14, 15, 18, 21, and 23-26 are Unpatentable over Hon, alone or with Brooks and Whittemore 47

 A. Independent Claims 1 and 15: Overview and the Combination..... 47

 B. Preambles..... 50

 C. Element 1/15[a]: an electrical power source 51

 D. Element 1/15[b]: electrical resistance heater..... 53

 E. Element 1/15[c]: puff-actuated controller 55

 F. Element 1/15[d]: rod-shaped carrier device 66

 1. Overview of Hon’s rod-shaped carrier device comprising a cartridge 67

2.	Mixture of tobacco extract (comprising nicotine) and aerosol-forming material	69
3.	Absorbent fibrous/wicking material.....	71
4.	Single unit cartridge/carrier.....	77
5.	[Removably] engaged.....	80
6.	Rod-shaped and generally tubular, with airflow therethrough.....	82
G.	Element 1/15[e]: wicking and aerosol formation	83
H.	Dependent Claims.....	94
1.	Claim 2: glycerin or propylene glycol.....	94
2.	Claims 5 and 18: organic acid	94
3.	Claim 7: synthetic polymer fibrous material.....	94
4.	Claims 9, 11, 21 and 23: cartridge materials.....	95
5.	Claim 12: carrier is removably engaged	99
6.	Claims 14 and 24: absorbent fibrous material in contact with heater	100
7.	Claim 25: wick in proximity to heater	100
8.	Claim 26: air passageway along length of cartridge .	100
IX.	Claims 3, 4, 13, 16, and 17 are Unpatentable Over Hon, Whittemore, Brooks, and Susa.....	101
A.	Claims 3, 4, 16, and 17: flavoring agent, and menthol in particular	101
B.	Claim 13: glycerin, tobacco extract, and a flavoring agent.	103
X.	Claims 6 and 19 are Unpatentable Over Hon, Whittemore, Brooks, and Ray.....	104
XI.	CONCLUSION	108

I. Introduction and Qualifications

1. I have been retained by Philip Morris Products, S.A (“Petitioner”) to provide my opinion concerning the validity of U.S. Patent No. 9,901,123 (attached to the accompanying Petition as Ex. 1001, “the ’123 patent”) in support of a Petition for *Inter Partes Review* (“IPR”). I am being compensated for my time in connection with this IPR at my standard consulting rate, which is £125 per hour, plus actual expenses, regardless of the outcome of this matter.

2. I am an experienced engineer and have spent over 25 years developing products, including medical devices and drug delivery products, from concept through approvals and into market. I have particular expertise in medical devices, including coronary catheters, surgical instruments, in vitro diagnostic instruments, and drug delivery devices.

3. I obtained my MA in Engineering Science, 1st class, from Downing College of Cambridge University, in 1986.

4. I am currently the Director of Maddison Consulting, Limited, in Cambridge, UK. I founded my consulting company in 2011 and have been the director since then. In this role, I provide project management services and product development consultancy.

5. One example of my product development experience is when I led the development of an in vitro diagnostic instrument for a UK SME. I worked as the

project manager of a client team, driving a group of 30 staff to develop the instrument from concept to regulatory submission in 9 months. I also led the development of a novel colonoscope, from concept to clinical trials. We developed, manufactured and verified a new design of endoscope in just over 12 months. In another example, I led the development of a handset for use in electrosurgery. This was a complete turn-key project, from concept design to verification and production ramp up, and was completed in only 9 months.

6. Since January 2013, I have also worked for Team Consulting, Limited, on two occasions. On one, I managed the development of an organ preservation system that provides organ preservation, repair and assessment prior to transplantation. The project involved development from a prototype to a validated system.

7. From September 2010 to July 2011, I led the Patient Care sector of Sagentia, one of the five business units of the company, with responsibility for profit and loss, business development, and line management of a small team of sector specialists for drug delivery and critical care devices and markets.

8. From 2002 to 2010, I was a Managing Consultant and Skill Group Leader of the Product Engineering Group at PA Consulting Group. The majority of my work was in the area of medical device development, and included running

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.