



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/779,815	07/18/2007	Kenneth G. Furton	29171/42221A	2905
4743	7590	10/26/2016	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 233 SOUTH WACKER DRIVE 6300 WILLIS TOWER CHICAGO, IL 60606-6357			CLERKLEY, DANIELLE A	
			ART UNIT	PAPER NUMBER
			3643	
			NOTIFICATION DATE	DELIVERY MODE
			10/26/2016	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mgbdoCKET@marshallip.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* KENNETH G. FURTON and ROSS J. HARPER

---

Appeal 2014-009041  
Application 11/779,815  
Technology Center 3600

---

Before LYNNE H. BROWNE, JILL D. HILL, and ERIC C. JESCHKE,  
*Administrative Patent Judges.*

BROWNE, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Kenneth G. Furton and Ross J. Harper (Appellants) appeal under 35 U.S.C. § 134 from the rejection of claims 1, 4, 8–11, 13, 15, 17–19, and 24–31 under 35 U.S.C. § 103(a) as unpatentable over Harper (Ross J. Harper et al., *Developing the Science Behind Canine Olfaction of Forensic Specimens*, International Forensic Research Institute (2004)), Wan (TianLang Wan, *Analysis of Explosive Odor Signatures and Detector Dog Performance Employing Solid Phase Microextractions/Gas Chromatography (SPME/GC) and Controlled Polymer Permeation*, Florida International University

(2002)), and Van Loveren (US. 4,605,165, iss. Aug. 12, 1986).<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

#### CLAIMED SUBJECT MATTER

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method of training a canine to detect, by smell, an odor emanating from a material to be detected, comprising:
  - selecting an odor component, capable of volatilizing at room temperature, of the material to be detected, wherein the odor component is present in a headspace of the material to be detected;
  - dissolving the odor component, capable of volatilizing at room temperature, of the material to be detected in an organic solvent, wherein the material to be detected is selected from the group consisting of propellants, lead azide, lead styphenate, mercury fulminate, and sheet explosives;
  - absorbing the dissolved volatilizable component and organic solvent onto an absorbent material;
  - evaporating the organic solvent from the absorbent material prior to packaging the absorbent material in an inner container;
  - packaging the absorbent material in the inner container that is permeable to said volatilizable component;
  - packaging the inner container in an outer container that is impermeable to said volatilizable component, the outer container being sized to maintain a space between the inner and outer containers, the space having a desired volume for permeation of a known concentration of the volatilizable component into the space;
  - forming the known concentration of the volatilizable component in the space by maintaining the inner container in the outer container to allow the volatilizable component to permeate

---

<sup>1</sup> Claims 2, 3, 5–7, 12, 14, 16, and 20–23 are canceled. Appeal Br. 16–17.

through the inner container into the space until the desired volume is filled with a concentration of the volatilizable component and an outer surface of the inner container is saturated with a concentration of the volatilizable component such that the known concentration of the volatilizable component is provided immediately upon removal of the outer container;

removing the outer container,

exposing the known concentration immediately upon removing the outer container, the known concentration being sufficient for detection by the canine;

disposing the inner container in a location accessible for the canine to detect the volatilizable component permeating through the inner container; and

releasing the canine in the location to detect the odor of the volatilizable component permeating through the inner container.

## DISCUSSION

### Claims 1, 4, 8–11, 13, 15, 17–19, and 29–31

The Examiner finds that Harper, Wan, and Van Loveren discloses or suggests all of the limitations of independent claim 1. *See* Final Act. 2–5.

In particular, the Examiner finds that

it is old and well known in the art of training canines to select an odor component (Wan p. 100-106, specifically Tables 3.29-3.34, shows odor chemicals training on canines performed with the chemical sample 2,4-dinitrotolulene), capable of volatilizing at room temperature, of the material to be detected, where the odor component is present in the headspace of the material to be detected (Wan as discussed on p. 100); the group consisting of propellants (Wan p. 9 shows DNT is present in smokeless powders).

*Id.* at 3.

Appellants contend that “Wan only specifically teaches the selection of odor components for detection from C-4 and TNT and provides no suggestion for such selection from a propellant, as claimed.” Appeal Br. 6.

Appeal 2014-009041  
Application 11/779,815

Based on this contention, Appellants argue that “Wan does not teach or suggest selecting an odor component present in the headspace of a material to be detected selected from the group consisting of propellants, lead azide, lead styphenate, mercury fulminate, and sheet explosives.” *Id.*

Responding to this argument, the Examiner proffers Joshi (Monica Joshi et al., *Detection of Odor Signatures of Smokeless Powders Using Solid Phase Microextraction Coupled to an Ion Mobility Spectrometer*, 188 FORENSIC SCI. INT’L 112–118 (2009)) as evidence that “it is known in the art that common smokeless powder components such as diphenylamine (DPA), ethyl centralite, 2-ethyl 1-hexanol and 2,4-dinitrotoluene, are compounds present in the vapor phase of smokeless powders.” Ans. 3.

Appellants contest this evidence, noting that Joshi “was published well after the July 18, 2007, filing date of the present application, and July 18, 2006, priority date.” Reply Br. 3. Appellants argue that Joshi is not evidence that “DNT was known in the art as a detectable odor component present in the headspace of smokeless powders, which can be used for the detection of smokeless powders by canines” at the time of the invention. *Id.*

Given that Joshi was published three years after the effective filing date of the instant application, Joshi is not evidence of what was known to one skilled in the art at that time. As the Examiner provides no other evidence that “DNT was known in the art as a detectable odor component present in the headspace of smokeless powders, which can be used for the detection of smokeless powders by canines” (Reply Br. 3), the Examiner’s finding is not supported by a preponderance of the evidence.

For this reason, we do not sustain the Examiner’s decision rejecting claim 1, and claims 4, 8–11, 13, 15, and 17–19, which depend therefrom. The rejection of independent claim 29 also relies upon Joshi as evidence of

Appeal 2014-009041  
Application 11/779,815

what was known to one skill in the art at the time of the invention.

Accordingly, we do not sustain the Examiner's decision rejecting claim 29, and claims 30 and 31, which depend therefrom for the same reasons.

Claims 24–28

The Examiner finds that Harper, Wan, and Van Loveren disclose or suggest all of the limitations of claim 24. *See* Final Act. 6–8. In particular, the Examiner finds that “[p]ermeability is old and notoriously well known to depend on chemical composition, particle size and selection of material.”

*Id.* at 8. The Examiner determines that it would have been obvious to

modify the method of Harper et al. as modified by Van Loveren et al., to include an inner container having a permeability in the range of 80.36 pg/s to  $3.23 \times 10^3$  pg/s, at room temperature, since it has been held that where routine and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

*Id.* (citing *In re Aller*, 220 F.2d 454, 456 (CCPA 1955)).

Noting that “[t]he claimed invention further provides for packaging the inner container in an impermeable outer container to prevent contamination during storage, for example, from adjacently stored training aids,” Appellants contend that:

[s]uch selection cannot be characterized as routine optimization because the prior art does not recognize the inner container thickness, the inner container permeability, and inner and outer packaging as claimed as result effective variables for the prevention of contamination of a packaged odor component designed to be repeatable and reliably released for detection by a canine.

Appeal Br. 9–10 (citing MPEP § 2144.05 II B).

In other words, Appellants challenge the Examiner's finding that permeability is a results-effective variable. *See id.* A particular parameter

Appeal 2014-009041  
Application 11/779,815

must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618 (CCPA 1977).

Responding to Appellants' challenge, the Examiner merely repeats the finding that permeability is a recognized result-effective variable. *See* Ans. 5. It is not readily apparent that permeability is an art-recognized result-effective variable. Accordingly, the Examiner's finding is not supported by a preponderance of evidence.

For this reason, we do not sustain the Examiner's decision rejecting claim 24, and claims 25–28, which depend therefrom.

#### DECISION

The Examiner's rejection of claims 1, 4, 8–11, 13, 15, 17–19, and 24–31 is REVERSED.

REVERSED