

**THIS OPINION WAS NOT WRITTEN FOR PUBLICATION**

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 42

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES  
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**Ex parte** KEVIN C. SPENCER  
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Appeal No. 1997-3886  
Application 08/232,460  
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HEARD: MAY 3, 2000  
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Before KIMLIN, WARREN and WALTZ, **Administrative Patent Judges.**  
WALTZ, **Administrative Patent Judge.**

**DECISION ON APPEAL**

This is an appeal under 35 U.S.C. § 134 from the  
examiner's final rejection of claims 74 through 85, which are  
all of the claims remaining in this application.

According to appellant, the invention is directed to the  
preservation of vegetables using certain noble gas mixtures

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(Brief, page 2). Appellant states that the claims stand or fall "independently" of each other (Brief, page 3). However, appellant has presented separate arguments for patentability that merely recite the limitations of each dependent claim with the recitation that "[t]his aspect of the present invention is neither disclosed nor suggested by any of the cited references." (Brief, pages 9-11). Appellant has not presented specific, substantive arguments for the separate patentability of each claim. See 37 CFR § 1.192(c)(7)(1995); **In re Herbert**, 461 F.2d 1390, 1391, 174 USPQ 259, 260 (CCPA 1972). Accordingly, pursuant to the provisions of 37 CFR § 1.192(c)(7)(1995), we select claim 74 from the grouping of claims and decide this appeal as to the grounds of rejection on the basis of this claim alone. Illustrative claim 74 is reproduced below:

74. A process for the preservation of vegetables, which comprises subjecting said vegetables to a gaseous atmosphere consisting essentially of about 80% to 99% volume of gaseous argon and about 1% to 20% volume of a second gas selected from the group consisting of krypton, xenon, neon and mixtures thereof, based upon the total volume of the gaseous atmosphere.

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The examiner has relied upon the following references as evidence of obviousness:

Segall 1972	3,677,024	Jul. 18,
Myers 1985	4,515,266	May 7,
Powrie et al. (Powrie) 1990	4,895,729	Jan. 23,
Fath et al. (Fath) 1992	5,128,160	Jul. 7,
		(filed Jul. 16,
1990)		
Rey (French '669) 1963	1,339,669	Sep. 2,
(Published French Patent Document) <sup>1</sup>		

Claims 74-85 stand rejected under 35 U.S.C. § 103 as unpatentable "over either one of (A)French Patent No. 1,339,669 ('French') or Segall taken together with either one of Myers or Powrie or (B)Myers or Powrie taken alone." (Answer, page 4). Claims 74-81 stand rejected under 35 U.S.C. § 103 as unpatentable over Fath (*id.*).<sup>2</sup> We **affirm** all of the examiner's rejections for reasons which follow.

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<sup>1</sup>We cite from and rely upon a full English translation of this document now of record. A copy of this translation is attached to this decision.

<sup>2</sup>The final rejection of claims 75-77 and 81 under the second paragraph of 35 U.S.C. § 112 has been withdrawn (Answer, page 3).

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**OPINION**

**A. The Rejection in view of French '669, Segall, Myers and Powrie**

The process recited in claim 74 on appeal comprises subjecting vegetables to a gaseous atmosphere consisting essentially of about 80 to 99% volume of gaseous argon and about 1 to 20% volume of krypton, xenon, neon or mixtures thereof.

The examiner finds that French '669 discloses stabilizing biological products by injecting rare gases<sup>3</sup> including argon, xenon, krypton and neon into the biological products in a closed container (Office action dated July 9, 1996, Paper No. 28, page 4). The examiner also finds that Segall teaches the preservation of vegetables by contacting this food with argon and other noble gases (*id.*, paragraph bridging pages 4-5). The examiner further finds that Powrie discloses preservation of produce such as vegetables by packaging vegetables with noble gases in conjunction with oxygen as a carrier gas while

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<sup>3</sup>It is not contested that "rare gases" are the same as "noble gases" and include helium (He), neon (Ne), argon (Ar), krypton (Kr) and xenon (Xe). **See Hackh's Chemical Dictionary**, p. 722 (3rd ed., The Blakiston Co., Inc., 1953), a copy of which is attached to this decision.

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Myers discloses the preservation of flavor and color by inhibiting bacterial growth in produce by using noble gases with a carrier gas (*id.* at page 5). Finally, the examiner notes that appellant admits that it was well known to preserve fruits and vegetables with argon (*id.*, citing pages 5-11 of the specification).<sup>4</sup> The examiner concludes that it would have been obvious to one of ordinary skill in the art to have treated vegetables with an inert gas such as argon or mixtures of argon with another noble gas (*id.* at pages 5-6).

Appellant argues that none of the references cited, either alone or in combination with each other or with any admissions made in the specification, would have rendered the present invention obvious (Brief, page 4). Appellant argues that none of the references discloses or suggests the binary mixture of noble gases as required by the claims on appeal (Brief, pages 3 and 5; Reply Brief, page 1). Appellant's argument is not persuasive as the cited prior art, as a whole, reasonably would have suggested the preservation of vegetables

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<sup>4</sup>It is axiomatic that admitted prior art in an appellant's specification may be used in determining the patentability of a claimed invention. **In re Nomiya**, 509 F.2d 566, 570-571, 184 USPQ 607, 611-12 (CCPA 1975).

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by use of 100% argon or mixtures of argon and equivalent other noble gases.

Appellant has not contested the examiner's use of the admitted prior art in the specification to establish that it was well known in the prior art to preserve vegetables with an argon atmosphere, i.e., 100% argon (see the Brief, page 4, and the Office action dated July 9, 1996, Paper No. 28). The process of claim 74 on appeal includes subjecting vegetables to an atmosphere of "about 99% volume of gaseous argon." Thus the prior art discloses a specific embodiment that is so similar to the claimed embodiment that **prima facie** one of ordinary skill in the art would have expected them to possess similar properties. **See Titanium Metals Corp. of Am. v. Banner**, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). The binary mixture of noble gases recited in claim 74 on appeal would also have been suggested by the teachings of the cited prior art to use noble gases in preservation of foodstuffs such as vegetables. For instance, French '669 teaches the use of a rare gas, preferably argon, as a protective atmosphere superior to nitrogen (page 3). This

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reference also teaches that "other rare gases such as helium, neon, krypton, and xenon are also suitable." (page 4). Segall teaches that helium is particularly useful as a preservation atmosphere but other noble gases may be used (column 2, lines 18-23). Myers teaches the use of nitrogen, argon, helium or carbon dioxide as a preservative gas (column 2, lines 29-30). Powrie teaches gas flushing with nitrogen, argon, helium and hydrogen to preserve fruit (column 10, lines 7-10).

Accordingly, it would have been well within the ordinary skill in the art to combine two well known preservative gases, each of which is taught by the prior art to be useful for the same purpose, to form a mixture to be used for the very same purpose. **In re Kerkhoven**, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). The amounts of each gaseous component would have been well within the ordinary skill of the art. **See In re Woodruff**, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Appellant argues that French '669 is directed to treating "biological products" and not vegetables (Brief, page 4). This argument is not persuasive since "biological products" is

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generic to foodstuffs including vegetables and appellant admits in the specification that argon has been used in the preservation of vegetables. Appellant argues that Segall relies upon ultrahyperbaric pressures (Brief, page 4) but, as noted by the examiner on page 4 of the Answer, the claimed process does not recite any pressure limitations. Appellant submits that Powrie is directed to the preservation of fruit and the examiner has not supported his position that fruit and vegetables are considered indistinguishable for purposes of preservation in this art (Brief, pages 5-7). However, this argument is not well taken since the examiner has submitted evidence to support his position, namely the citation of Fath to show the equivalent treatment of fruits and vegetables in this art (Answer, page 6).

For the foregoing reasons, we determine that the examiner has established a **prima facie** case of obviousness in view of the reference evidence.

#### **B. The Rejection over Fath**

The examiner finds that Fath discloses preservation of vegetables by treating them with an atmosphere of argon,

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oxygen as a carrier, with any remainder being a rare gas  
(Office action dated July 9, 1996, Paper No. 28, page 8).

Appellant argues that Fath is only directed to the use of  
nitrogen or argon or a mixture of the two with from 0 to 50%  
of oxygen (Brief, page 6). Appellant's argument is not  
persuasive since Fath clearly teaches (column 2, lines 24-31)

[S]aid atmosphere at least initially  
contains from 10 to 100%, typically  
at the industrial level from 50 to  
80% nitrogen monoxide or argon, or  
a mixture of the two, from 2 to 20%  
and typically from 15 to 20% oxygen  
and the remainder if any being composed  
of an inert gas in the sense of this  
invention, i.e. nitrogen, carbon  
dioxide or another rare gas or  
mixtures thereof.

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Although Fath does not exemplify argon or rare gas mixtures, we agree with the examiner that the combination of argon and another rare gas would have been suggested by the rather limited disclosure of Fath. Examples in a reference are only exemplary of the broader disclosure, all of which is available for what it clearly teaches or suggests to one of ordinary skill in the art. **In re Widmer**, 353 F.2d 752, 757, 147 USPQ 518, 523 (CCPA 1965). Accordingly, we determine that the examiner has established a **prima facie** case of obviousness in view of this reference evidence.

### **C. Evidence of Unexpected Results**

Appellant has submitted evidence of unobvious results in the form of a Declaration under 37 CFR § 1.132 by Kevin C. Spencer dated Dec. 11, 1995, Paper No. 25 (hereafter the Declaration, see the Brief, pages 6-9, and the Reply Brief, pages 1-2).

Although the Declaration contains a great amount of data, there is only one comparative point with the closest prior art (i.e., Fath). Fath discloses that nitrogen monoxide or argon is the main component in a preservative atmosphere for

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vegetables (see column 2, lines 21-31; column 3, lines 4-12). The results presented in the Declaration fail to show that argon is unexpectedly superior to nitrogen monoxide in the preservation of vegetables. See Table 1 of the Declaration, where nitrogen monoxide (N<sub>2</sub>O) yields similar results to argon for preservation of three vegetables, with both gases containing carrier oxygen at 8:2 ratios. Declarations under 37 CFR § 1.132 must compare the claimed subject matter with the closest prior art to be effective. **In re Burckel**, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979). Any comparisons in such a Declaration must show differences to an appreciable degree such that the difference was actually unexpected. **In re Merck & Co., Inc.**, 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986).

Furthermore, any such comparative evidence must be commensurate in scope or permit conclusions with respect to the scope of the claimed subject matter. **In re Boesch**, 617 F.2d 272, 277, 205 USPQ 215, 220 (CCPA 1980); **In re Payne**, 606 F.2d 303, 315-16, 203 USPQ 245, 256 (CCPA 1979). The claimed subject matter includes preservation of vegetables by

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treatment with an atmosphere of "about . . . 99% volume" argon and "about 1% . . . volume" of krypton, xenon or neon (see claim 74 on appeal). Although argon and nitrogen are compared many times in the Declaration (presumably at or near 100% volume; see Tables 1, 3, 18 and 19), there are no comparative data representing the claimed subject matter as noted above, i.e., 99% argon and 1% of any of the three noble gases. Accordingly, the comparative evidence is not commensurate in scope with the claimed subject matter. Appellant/declarant has not presented any convincing technical reasoning or argument that the data submitted would permit conclusions or be predictive of unexpected results for the entire scope of the claimed subject matter.

#### **D. Other Issues**

In the event of further or continuing prosecution of this application before the examiner, the examiner should reconsider the patentability of claims 82-85 in view of Fath. These claims were not included in the rejection on appeal involving Fath but appear to include subject matter which is

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disclosed or suggested at column 3 of Fath. The examiner and applicant should also consider the patentability of the claimed subject matter in view of Schreiner, U.S. Patent 3,183,171, described on pages 14-15 of the specification. Schreiner discloses the use of mixtures of two or more inert gases, including noble gases, for the preservation of foods by inhibiting the growth of undesirable fungi (see column 1, lines 52-54; line 71-column 2, line 4; and column 3, lines 30-35).

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The examiner should also note the inconsistency in the scope of independent claim 74 and dependent claim 75 by use of the transitional terms "consisting essentially of" and "comprising," respectively. See 35 U.S.C. § 112, second and fourth paragraphs.

#### **E. Conclusions**

For the foregoing reasons, we determine that the examiner has presented a **prima facie** case of obviousness in view of the reference evidence. Based on the totality of the record, including appellant's arguments and evidence, we determine that the preponderance of evidence weighs in favor of obviousness within the meaning of 35 U.S.C. § 103. Accordingly, the rejections of the examiner are affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**AFFIRMED**

	)	
EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
CHARLES F. WARREN	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
THOMAS A. WALTZ	)	
Administrative Patent Judge	)	

TAW:hh

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