

File

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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PAT & TM OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte V. N. MALLIKARJUNA RAO

Appeal No. 94-0872  
Application 07/891,390<sup>1</sup>

ON BRIEF

Before KIMLIN, WEIFFENBACH and OWENS, Administrative Patent Judges.

WEIFFENBACH, Administrative Patent Judge.

DECISION ON APPEAL

This appeal is from the examiner's final rejection of claims 1-19. We reverse.

<sup>1</sup> Application for patent filed May 29, 1992.

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The invention is directed to a process for producing  $CF_3CH_2F$  from  $CF_3CHClF$  by chlorinating  $CF_3CHClF$  to form  $CF_3CCl_2F$  which is then hydrogenated to form  $CF_3CH_2F$ . Claim 1 is illustrative of the invention:

1. A process for producing 1,1,1,2-tetrafluoroethane from 2-chloro-1,1,1,2-tetrafluoroethane comprising the steps of: contacting a gaseous mixture containing said 2-chloro-1,1,1,2-tetrafluoroethane and chlorine with a chlorination catalyst at a temperature of from about 225°C to about 450°C to produce 2,2-dichloro-1,1,1,2-tetrafluoroethane, wherein the chlorination catalyst is selected from the group consisting of carbon catalysts; and reacting said 2,2-dichloro-1,1,1,2-tetrafluoroethane with hydrogen in the presence of a carbon-supported precious metal catalyst at a temperature of from about 100°C to 250°C to produce 1,1,1,2-tetrafluoroethane.

In rejecting the claims, the examiner relies on the following references:

Oshio et al. (Oshio)	4,996,379	Feb. 26, 1991
Rao et al. (Rao)	5,120,883	Jun. 9, 1992
		(Filed Aug. 26, 1991)

Claims 1-19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rao in view of Oshio. The examiner points out that Rao discloses reacting a starting material such as  $CF_3CHCl_2$  with chlorine at a temperature between 225° C. and 450° C. in the

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The reaction of chlorine with halogenated hydrocarbons to replace one or more hydrogen atoms with chlorine is so well recognized in the art that it had been and would be selected by those skilled in the art for similar starting materials.

Furthermore, those skill in the art would have been aware that the presence of a fluorine atom on the carbon containing the hydrogen to be replaced would not have materially effected the productions of the expected chlorinated product.

It would have been obvious to one of ordinary skill in the art to utilize the process of Rao et al using the analogous starting material of the claimed process to produce the starting material of the process of Oshio et al to obtain the instant results of appellants because the hydrogenation step disclosed by Oshio et al does not require any particular source for the starting material to function as disclosed.

#### Opinion

We have carefully reviewed the application record which led to this appeal and the respective positions advanced by appellants and the examiner for patentability of the appealed claims. For the reasons set forth below, we will not sustain the examiner's rejection under 35 U.S.C. § 103.

It is well settled that the examiner has the burden of establishing that the claimed invention would have been a *prima*

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*facie* case of obviousness over the prior art taken as a whole. The examiner may satisfy this burden by making a showing of some objective teachings or suggestions in the prior art that knowledge available to one of ordinary skill in the art would have led that person to arrive at the claimed invention, including each and every limitation in the claims, without recourse to appellant's disclosure. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 1074-1076, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1471, 223 USPQ 785, 788 (Fed. Cir. 1984).

The examiner's reliance on *In re Durden* is noted. However, the recent decision in *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995) ended speculation about *per se* rules of obviousness. The court stated that

[T]he examiner incorrectly drew from *Durden*, a case turning on specific facts, a general obviousness rule: namely, that a process claim is obvious if the prior art references disclose the same general process using "similar" starting materials [footnote omitted]. No such *per se* rule exists. Mere citation of *Durden* ...

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or any other case as a basis for rejecting process claims that differ from the prior art by their use of different starting material is improper, as it sidesteps the fact-intensive inquiry mandated by section 103.<sup>[2]</sup>

Thus, the principal issue before us is whether it would have been within the skill of the art from the combined teachings of Rao and Oshio taken as a whole to substitute  $\text{CF}_3\text{CHClF}$  for  $\text{CF}_3\text{CH}_x\text{Cl}_{3-x}$  where x is an integer from 1 to 3, the starting material in Rao.

Rao at column 1, lines 45-49 discloses that  $\text{CF}_3\text{Cl}_3$  can be reacted with HF to form  $\text{CF}_3\text{CCl}_2\text{F}$  which then can be converted to  $\text{CF}_3\text{CH}_2\text{F}$ . Thus, the reference discloses forming the intermediate product,  $\text{CF}_3\text{CCl}_2\text{F}$ , as used in the claimed process, albeit by another method. However, Rao does not teach or disclose, and the examiner agrees, a method of converting  $\text{CF}_3\text{CHClF}$  to  $\text{CF}_3\text{CCl}_2\text{F}$ . We are not persuaded by the examiner's motivation argument. There is no teaching or facts in Rao or Oshio that would have led one skilled in the art to substitute in the Rao process an ethane having fluorine atoms on both the C-1 and C-2 carbon atoms for an

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<sup>2</sup> *In re Ochiai*, 71 F.3d at 1570, 37 USPQ2d at 1132.

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ethane having fluorine atoms only on the C-1 carbon atom to arrive at the starting material in the Oshio process (CF<sub>3</sub>CCl<sub>2</sub>F).

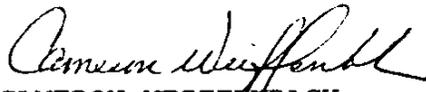
**Conclusion**

For the foregoing reasons, the decision of the examiner is reversed because the examiner has failed to establish on the record of this application a *prima facie* case of obviousness.

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

**REVERSED**

  
EDWARD C. KIMLIN )  
Administrative Patent Judge)

  
CAMERON WEIFFENBACH )  
Administrative Patent Judge)

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TERRY J. OWENS )  
Administrative Patent Judge)

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