

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(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SATOSHI ARAKAWA,
YUICHI HOSOI, KATSUHIRO KOHDA
and KIKUO YAMAZAKI

Appeal No. 1996-2853
Application 08/375,272¹

HEARD: September 14, 1999

Before BARRETT, FLEMING and HECKER, **Administrative Patent Judges.**

HECKER, **Administrative Patent Judge.**

DECISION ON APPEAL

¹ Application for patent filed January 19, 1995. According to applicants, this application is a continuation of S.N. 08/249,476, filed May 26, 1994 (Abandoned); which is a continuation of S.N. 08/043,995, filed April 7, 1993; which is a continuation of S.N. 07/686,833, filed April 17, 1991; which is a division of S. N. 07/462,337, filed January 2, 1990, which is a continuation of S. N. 07/184,010, filed April 20, 1988.

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This is a decision on appeal from the final rejection of claims 21, 22, 24, 25 and 27. Claims 1 through 20 were canceled in parent applications, prior to filing this continuation application, and claims 23, 26, 28 and 29 were canceled by an amendment after final rejection, Paper No. 37.

The invention relates to a radiation image storage panel having a sheet of stimuable phosphor impregnated with a cured resin.

Representative independent claim 21 is reproduced below:

21. A radiation image storage panel having a sheet of stimuable phosphor comprising a sintered stimuable phosphor and a cured resin, which is prepared by the steps of forming a sheet of a powder comprising the stimuable phosphor, firing the sheet to give a sintered sheet of the stimuable phosphor, impregnating the sintered sheet with a thermosetting resin, an ultraviolet-curing resin or an electron beam-curing resin, and curing the impregnated resin.

The Examiner relies on the following references:

Arakawa et al. (Arakawa)	4,910,407	Mar.
20, 1990		
	(effective filing date Jan. 5,	
1984)		
Tsuchino et al. (Tsuchino)	EP 0175578	Mar. 26, 1986

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Claims 21, 22, 24, 25 and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Arakawa and under 35 U.S.C. § 103 as being unpatentable over Tsuchino.²

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief, reply brief and answer for the respective details thereof.

OPINION³

After a careful review of the evidence before us, we will not sustain the rejection of claims 21, 22, 24, 25 and 27 under 35 U.S.C. § 103.

The Examiner has failed to set forth a *prima facie* case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed

² These rejections are stated as new grounds of rejection in the Answer, but had been made against the dependent claims (23,26 and 29) which were canceled in the amendment after final rejection, Paper No. 37. At the same time, the subject matter of these canceled claims was added to the respective independent claims, necessitating the rejection change.

³ As a preliminary matter, Appellants had indicated in their brief that the Board would be updated on any related appeals and interferences after a completion of reviewing their files. At oral hearing Appellants indicated that no related appeals or interferences had been found.

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invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

"Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995) (***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984)).

With respect to the Arakawa rejection, Appellants argue:

In contrast, the stimulable phosphor layer of the present invention is produced by sintering or vacuum depositing. Dictionary of Scientific and Technical Terms, Third Edition (McGraw-Hill) describes these terms as follows:

Sintering: Forming coherent bonded mass by heating metal powders without melting; used mostly in powder metallurgy.

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Vacuum Deposition: Deposition of a thin
coating of metal by condensation on
a cool work surface in vacuum.
(Reply brief-page 2.)

In the rejection based on Arakawa, the Examiner states:

Accordingly, all of the positive structural
limitations of the radiation image storage
panel claimed in independent claims 21, 24
and 27 are shown in the disclosure of
Arakawa **et al.** except for the particular
choice of resin. (Answer-page 4.)

Claims 21 and 24 recite "a sintered stimuable phosphor",
and claim 27 recites "a deposited stimuable phosphor ...
which is prepared by the steps of vacuum-depositing a
stimuable phosphor"

We have carefully reviewed all portions of Arakawa cited
by the Examiner and cannot find these limitations. Our own
review of Arakawa reveals a compression/heat treatment at
column 10 line 58-column 11 line 4. However there is no
indication whether this treatment is sufficient to sinter the
phosphor and the Examiner has not alleged so. We have also
found that Arakawa "deposits" the stimuable phosphor onto a
support by using a doctor blade, a roll coater, a knife coater
or the like (column 2, line 6). We find that the resulting
product would not be the same as one that had been deposited

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by a vacuum process, nor has the Examiner alleged so. Thus we find that Arakawa does not meet the claim limitations of any of the independent claims.

Appellants further argue with regard to Arakawa:

Appellant's claimed radiation storage panel comprises a sintered stimuable phosphor and a cured resin. The resin filled in the phosphor layer is clearly a cured resin which is formed by the curing step. The cured resin in Appellants' stimuable phosphor layer fills in pores or cracks formed in the sintered or deposited phosphor layer so fast that mechanical strength of the phosphor layer can be increased and the radiation image-forming characteristics can be improved. Generally employed binder resins such as those described in Arakawa et al. are noncurable resins and the noncurable resins cannot impart such improvements as those provided by the cured resin to the phosphor layer. (Reply brief-page 3.)

We note that all independent claims recite "a cured resin". The Examiner states:

If the examples of suitable resinous materials found at column 7, lines 45-55, do not constitute curable resins as claimed, then the use of resins of the type claimed in the radiation image storage panel of Arakawa **et al.** would have been obvious to one of ordinary skill in the art in view of their ready availability and known properties. (Answer-page 4.)

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The Examiner has not alleged the resins of Arakawa to be cured resins. On the other hand, Appellants have stated that Arakawa's resins are not cured resins. We must therefore assume that Arakawa's resins are not cured. Thus we must decide whether the Examiner has shown the use of cured resins to be obvious. The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992), *citing In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." *Para-Ordnance Mfg. v. SGS Importers Int'l*, 73 F.3d at 1087, 37 USPQ2d at 1239, *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. We find that the Examiner has not shown the use of a cured resin to be obvious, and we will not sustain the rejection of claims 21, 24 and 27 on this ground.

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With regard to rejection citing Tsuchino, Appellants argue:

As argued with respect to the disclosure of Arakawa, the resin filled in the phosphor layer should be a cured resin. The cured resin in Appellant's stimuable phosphor layer fills in pores or cracks formed in the sintered or deposited phosphor layer so fast that mechanical strength of the phosphor layer can be increased and the radiation image-forming characteristics can be improved. Generally employed binder resins such as those described in Tsuchino et al. are noncurable resins, and these noncurable resins cannot impart such improvements as those provided by the cured resin to Appellants' phosphor layer. (Reply brief-page 4.)

The Examiner states:

If the examples of suitable resinous materials found at page 21 do not constitute curable resins as claimed, then the use of resins of the type claimed in the radiation image storage panel of Tsuchino et al. would have been obvious to one of ordinary skill in the art in view of their ready availability and known properties. (Answer-page 5.)

The Examiner has not alleged the resins of Tsuchino to be cured resins. On the other hand, Appellants have stated that Tsuchino's resins are not cured resins. We must therefore assume that Tsuchino's resins are not cured. Thus we must

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decide whether the Examiner has shown the use of cured resins to be obvious. For the same reasons noted supra with respect to Arakawa, we conclude that claims 21, 24 and 27 (all independent claims) would not have been obvious under 35 U.S.C. § 103 over Tsuchino.

We have also thoroughly reviewed Tsuchino and find no teaching of a sintered stimulable phosphor (re: claims 21 and 24), although vapor deposition (re: claim 27) is taught at page 14. We find no teaching of resin "impregnation" (re: claims 21, 24 and 27) in Tsuchino (as argued by Appellants at the top of page 4 of the reply brief) since the protective layer is "coated" on (page 21). However, Arakawa would result in a resin impregnated product since the resin is also used as a binder and mixed with the phosphor before applying it to a surface.

The remaining claims on appeal also contain the above limitations discussed in regard to claim 21, 24 and 27, and thereby, we will not sustain the rejection as to these claims.

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We have not sustained the rejection of claims 21, 22, 24, 25 and 27 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

Lee E. Barrett)	
Administrative Patent Judge)	
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Michael R. Fleming)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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Stuart N. Hecker))
Administrative Patent Judge)	

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