

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 44

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HISATAKE YOKOUCHI, YOICHI ONODERA,
FUMITAKA TAKAHASHI, MITSURU IKEDA and KOICHI KOIKE

Appeal No. 1997-2030
Application 08/400,287

HEARD: August 15, 2000

Before JERRY SMITH, FLEMING and RUGGIERO, **Administrative Patent Judges.**
FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 25 through 39, all the claims pending in the present application. Claims 1 through 24 have been canceled.

The invention relates to an X-ray radiography system including X-ray image

intensifier tube in a video camera for pickup of the output image of an image intensifier tube .

Independent claim 25 is reproduced as follows:

25. A digital radiography system comprising:

an X-ray source irradiating an object to be inspected with X-rays;

an X-ray image intensifier tube receiving the X-rays which passes through the object and converting the received X-rays into an output optical image, a diameter of an input image of said X-ray image intensifier tube ranging from 305 to 406 mm, a diameter of an output image of said X-ray image intensifier tube ranging from 58 to 62 mm, and a ratio of the diameter of the input image to the diameter of the output image ranging from 5 to 7;

a video camera picking up the output optical image, said video camera having a plurality of scanning modes including a fluoroscopic mode and a radiographic imaging mode, said fluoroscopic mode monitoring a real-time X-ray image of the object irradiated by the X-rays, and said radiographic imaging mode recording an X-ray image of the object irradiated by X-rays, said video camera having a beam scanning area on an image pickup surface thereof which is the same for both said fluoroscopic mode and said radiographic imaging mode;

an optical system including a plurality of lenses, said optical system being disposed between said X-ray image intensifier tube and said video camera so as to output substantially the same size output optical image of the X-ray image intensifier tube on the video camera in both of said fluoroscopic mode and said radiographic imaging mode;

image processing means for converting an output from said video camera

into a digital signal to obtain digital image data; and

image displaying means for displaying an X-ray image by reading out said digital image data from said image processing means.

The Examiner relies upon the following references:

Grossel et al. (Grossel)	3,835,314	Sep. 10, 1974
Yokouchi et al. (Yokouchi)	5,022,063	Jun. 04, 1991
Nields et al. (Nields)	5,119,409	Jun. 02, 1992

Claims 25 through 27, 29 through 31, 33 through 35 and 37 through 39 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yokouchi In view of Grossel.

Claims 28, 32 and 36 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yokouchi in view of Grossel and Nields.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the briefs and answer for the respective details thereof.¹

OPINION

We will not sustain the rejection of claims 25 through 39 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 invention by the express teachings or suggestions found in the prior art, or by

¹ Appellants filed an appeal brief on September 5, 1996. Appellants filed a reply on February 24, 1997. Examiner mailed an Office communication on April 11, 2000 stating that the reply has been entered but no further response by the Examiner is deemed necessary.

Appeal No. 1997-2030
Application 08/400,287

implications 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 Importer Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), 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).

Appellants argue on pages 10 and 11 of the brief that the suggested combination of the references of Yokouchi and Grossel does not provide for an optical system disposed between the X-ray image intensifier tube and the video camera, so as to output substantially the same size output image of the X-ray image intensifier tube on the video camera in both the fluroscopic mode and the radiographic imaging mode, as recited in the independent claims on appeal. Appellants further emphasize this argument on pages 2 and 3 of the reply brief stating that the Applicants again submit that Yokouchi does not disclose a structure of a video camera having the same beam scanning area in both a fluroscopic mode and a radiographic image mode.

On pages 6 and 7 of the answer, the Examiner responds to Appellants' arguments

by stating that the Appellants argue that Yokouchi's camera scanning area changes when switching between fluroscopic and radiographic modes. The Examiner argues that there is no evidence in Yokouchi's disclosure to support this position. The Examiner argues that Yokouchi reveals specific means for changing the number of scanning lines, frame rate, format, number of pixels, target voltage, beam current and current control voltage. The Examiner concludes that Yokouchi does not disclose that the scanning area on the image pickup surface of the video is different for the fluroscopic mode from the radiographic image mode.

We must remind the Examiner that it is the Examiner's burden of proof of showing evidence that the references as applied meet the claims presented by the Appellants.

We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. our reviewing court requires this evidence in order to establish a *prima facie* case. *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); *In re Knapp-Monarch Co.*, 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961). *In re Cofer*, 354 F.2d 664, 668, 148 USPQ 268, 271-72

(CCPA 1966). Furthermore, our reviewing court states in *In re Piasecki*, 745 F.2d 1468,

Appeal No. 1997-2030
Application 08/400,287

223 USPQ 785, 788 (Fed. Cir. 1984) the following:

The Supreme Court in ***Graham v. John Deere Co.***, 383 U.S. 1 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under Section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the "burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under section 102 and 103". Citing ***In re Warner***, 379 F.2d 1011, 1020, 154 USPQ 173, 177 (CCPA 1967).

We note that independent claim 25 recites "a video camera picking up the output optical image, said video camera having a plurality of scanning modes including a fluroscopic mode and a radiographic imaging mode, . . . said video camera having a beam scanning area on an image pickup surface thereof which is the same for both said fluroscopic mode and said radiographic imaging mode". We further note that independent claims 34, 38 and 39 recite the same or similar language.

Upon our close review of Yokouchi, Grossel and Nields, we fail to find that any of these references, individually or together, suggest a video camera having the same beam scanning area in both a fluroscopic mode and a radiographic image mode. Therefore, we will not sustain the Examiner's rejection of claims 25 through 29 and 34 through 39.

However, we note that Appellants' independent claim 30 does not recite the above

limitation. In particular, Appellants' independent claim 30 recites "a video camera picking up the output optical image, said video camera having a plurality of scanning modes and a beam scanning surface thereof which is the same for all of said plurality of scanning modes". We note that Yokouchi teaches in column 4, lines 45 through 47 and column 6, lines 25 through 27, that in the radiographic mode which includes the second, third and fourth scanning modes, the scanning area of the TV camera is the same. Therefore, we find that Yokouchi does meet the limitation as recited in Appellants' independent claim 30 because the claim does not preclude reading these plurality of scan modes as being simply these multiple radiographic image modes.

On pages 13 and 14 of the brief, Appellants argue that independent claim 30 recites specific dimensions of the input and output diameter of the X-ray image intensifier tube and a specific ratio of the diameter of the image input area to the image output area of a range of 4 to 8 or 5 to 7. Appellants argue that Yokouchi and Grossel do not suggest or teach specific dimensions or ratio range of 4 to 8 or 5 to 7 as recited in these claims.

We note that claim 30 recites "a diameter of an input image of said X-ray

image intensifier tube ranging from 305 to 406 mm, a diameter of an output image of

said X-ray image intensifier tube ranging from 58 to 62 mm, and a ratio of the diameter of the input image to the diameter of the output image ranging from 5 to 7".

On page 5 of the answer, the Examiner states that Grossel teaches a diameter of an input image of the X-ray image intensifier tube ranging from 229 to 356 mm, a diameter of output image of said X-ray image intensifier tube ranging from 100 to 152 mm and a ratio of the diameter of the input image to the diameter of the output image ranging from 1.3 to 4. The Examiner argues that the Appellants have not shown unexpected results and that the discovery of optimum value for a result effective variable in a known apparatus is within the skill of the art.

Upon our review of Grossel, we clearly find that Grossel does not teach a diameter of input image of said X-ray and image intensifier tubes ranging from 305 to 406 mm, a diameter of the output image of said X-ray intensifier ranging from 58 to 62 mm in a ratio the diameter of the input image to the diameter to the output image ranging from 5 to 7. We do agree that Grossel does teach a range for the diameter of the input image of the X-ray image intensifier tube which does overlap the claimed diameter of the input image of the X-ray image intensifier tube. However, Grossel does

not teach an overlapping range for the diameter of the output image of the X-ray image intensifier tube nor does Grossel teach that the ratio of the diameter of the input image to the diameter of the output image ranges from 5 to 7.

Furthermore, we note that Appellants' disclosure shows that these particular dimensions and ratios enhance the performance of the X-ray image intensifier tube over the prior art X-ray image intensifier tube. See figures 4 and 5 and page 9 through 11 of Appellants' specification.

Furthermore, we find that the Examiner has not shown any evidence or specific findings that the references as applied suggest making the modifications of the disclosed dimensions in ratios to obtain the Appellants' invention.

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 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "[s]uch a suggestion may come from the nature of the problem to be solved, leading inventors to look to references relating to possible solutions to that

Appeal No. 1997-2030
Application 08/400,287

problem." ***Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.***, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), ***citing In re Rinehart***, 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976)(considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in ***Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.***, 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellants. However, "[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention." ***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. In addition, our reviewing court requires the PTO to make specific findings on a suggestion to combine prior art references. ***In re Dembiczak***, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

Appeal No. 1997-2030
Application 08/400,287

Therefore, we will not sustain the Examiner's rejection of claims 30 through 33.

Additionally, we have not sustained the rejection of claims 25 through 39 under 35

U.S.C. §103. Accordingly, the Examiner's decision is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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MICHAEL R. FLEMING)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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Appeal No. 1997-2030
Application 08/400,287

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