

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(2) is not binding precedent of the Board.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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HERB J. J. SEGUIN

Appeal No. 94-1325
Application 07/882,928¹

ON BRIEF

Before COHEN, KIMLIN and LYDDANE, Administrative Patent Judges.

COHEN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 10. Subsequent to the final rejection, an amendment

¹ Application for patent filed May 14, 1992. According to the appellant, this application is a continuation-in-part of Application 07/431,084, filed November 3, 1989; which is a continuation-in-part of Application 07/108,638, filed October 15, 1987.

Appeal No. 94-1325
Application No. 07/882,928

approved for entry (Paper No. 9) cancelled claims 1 through 4 and 8 through

10, and added new claim 11. Accordingly, we have before us claims 5 through 7, and 11. ²

Appellant's invention pertains to a method of repairing cracks in the metal of a rail of a railway track or wheel of a rail vehicle. A basic understanding of the invention can be derived from a reading of exemplary claim 5, a copy of which appears below.

5. A method of repairing cracks in the metal of a rail of a railway track or a wheel of a rail vehicle, the method comprising:

generating at least one intense beam of energy capable of generating a vapour space in the metal;

² In a grandparent application Serial No. 07/103,638, a decision of the Board of Patent Appeals and Interferences (BPAI) was rendered in Appeal No. 89-3348 dated January 26, 1990 in which the same art now applied was reviewed. In a parent application Serial No. 07/431,084, the BPAI rendered a decision in Appeal No. 91-0995 dated October 4, 1991 again reviewing the same art as is now applied in the present appeal. However, in the present case we have before us different claimed subject matter and new declaration evidence.

Appeal No. 94-1325
Application No. 07/882,928

directing the intense beam of energy
towards the cracks in the metal;

vaporising [sic] metal within the rail or
wheel in the vicinity of the cracks to
form a vapour space extending at least 5
mm into the rail or wheel;

moving the beam of energy along the rail
or wheel at a speed such that the metal
surrounding the cracks melts when the beam
of energy is directed towards the metal
and solidifies after the intense beam of
energy moves on to form a narrow strip of
melted and solidified metal; and
depositing an alloying material within the
vapour space to form a microstructure upon
solidification of the alloying material
that is compatible with the rail metal.

As evidence of obviousness, the examiner has relied upon
the references listed below:

Gnanamuthu et al. 1977 (Gnanamuthu)	4,015,100	Mar. 29,
Shupe 1970	4,201,602	May 6,

The following rejection is before us for review.

Claims 5 through 7, and 11 stand rejected under 35
U.S.C. § 103 as being unpatentable over Gnanamuthu in view of
Shupe.

Appeal No. 94-1325
Application No. 07/882,928

The full text of the examiner's rejection and response to the argument presented by appellant appears in the answer (Paper No. 12), while the complete statement of appellant's argument can be found in the brief (Paper No. 11).³

OPINION

In reaching our conclusion on the obviousness issue raised in this appeal, this panel of the board has carefully considered appellant's specification and claims, the applied references, the declaration of Herb J. J. Sequin dated Nov. 5/92 (Paper No. 6) and the respective viewpoints of appellant and the examiner. As a consequence of our review, we make the determination which follows.

We cannot sustain the examiner's rejection of appellant's claims under 35 U.S.C. § 103.

This panel of the board fully understands the opinion of the examiner as clearly expressed in the answer. In particular, we note the examiner's view that "Unless the instant claims require

³ An earlier request for an oral hearing was waived by appellant (Paper No. 16).

Appeal No. 94-1325
Application No. 07/882,928

some additional, unclaimed and unmentioned step, it is difficult to imagine how a vapor space could be formed in the process of the instant claims and not in the process of Gnanamuthu et al".

As developed more fully below, we reach the conclusion that the language of method claim 5, when understood in light of the underlying disclosure, does address subject matter not suggested by the evidence of obviousness.

The method of repairing cracks in the metal of a rail of a railway track or a wheel of a rail vehicle, as set forth in Claim 5, requires, inter alia, generating at least one intense beam of energy capable of generating a vapour space in the metal, vaporising metal within the rail or wheel in the vicinity of the cracks to form a vapour space extending at least 5 mm into the rail or wheel, and depositing an alloying material within the vapour space.

We share the examiner's viewpoint that the collective teachings of the applied prior art would have been suggestive of a method of repairing cracks in the metal of a rail of a railway track

Appeal No. 94-1325
Application No. 07/882,928

that relies upon the laser technique of Gnanamuthu. However, based in particular upon the statements of declarant Seguin and the present specification, we are persuaded that the limitations in claim 5, as specified above, would not have been suggested by the applied prior art.

Declarant Seguin states (declaration, paragraph 6)

For the generation of a vapour space, 2000 kWatts per sq. cm. are required as a minimum. As cited in the present application (page 8, lines 8 - 16), the required power density is in the order of several thousand kWatts per sq. cm.

The specification (page 8, lines 8 through 12) sets forth that

Specifically, above a specific laser power density threshold of several million watts per square centimeter, the beam intensity is sufficient to create and maintain a small diameter opening or hole, extending a very large distance below the surface.

Appeal No. 94-1325
Application No. 07/882,928

In light of the above, we understand the recitation in claim 5 of one intense beam of energy capable of generating a vapour space in the metal as being required by the underlying disclosure to be a beam with a power density threshold of several million watts per square centimeter. This intense beam, as disclosed and claimed, will vaporize metal within a rail or wheel to form a vapour space extending at least 5 mm into the rail or wheel, and permit the depositing of an alloying material within the vapour space.

Having reviewed the teaching of Gnanamuthu in its entirety, it is at once apparent to us that this patent, in particular, would not have been suggestive of an intense beam of energy with a power density threshold of several million watts per square centimeter.

Further, lacking this aforementioned specific intense beam, we are persuaded that the claimed vapour space extending at least 5 mm into a rail or wheel would not have been suggested to one of ordinary skill in the art by the Gnanamuthu patent. For these reasons, we conclude that the evidence relied upon by the examiner would not have rendered the now claimed method obvious.

Appeal No. 94-1325
Application No. 07/882,928

In summary, this panel of the board has reversed the rejection of claims 5 through 7, and 11 under 35 U.S.C. § 103 as being unpatentable over Gnanamuthu in view of Shupe.

The decision of the examiner is reversed.

REVERSED

Irwin Charles Cohen)	
Administrative Patent Judge)	
)	
)	
Edward C. Kimlin)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
William E. Lyddane)	
Administrative Patent Judge)	

Appeal No. 94-1325
Application No. 07/882,928

Anthony R. Lambert
10328 - 81 Avenue, #204
Edmonton, Alberta, Canada T6E 1X2