In the Matter of

CERTAIN COMPOSITE DIAMOND COATED TEXTILE MACHINERY COMPONENTS

Investigation No. 337-TA-160

USITC PUBLICATION 1603

JULY 1984

United States International Trade Commission / Washington, D.C. 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Paula Stern, Chairwoman

Alfred E. Eckes

Susan W. Liebeler

Seeley G. Lodwick

David B. Rohr

Kenneth R. Mason, Secretary to the Commission

Address all communications to
Office of the Secretary
United States International Trade Commission
Washington, D.C. 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of CERTAIN COMPOSITE DIAMOND COATED TEXTILE MACHINERY COMPONENTS	Investigation No. 337-TA-160

COMMISSION ACTION AND ORDER

Background

The Commission instituted this investigation in response to a complaint filed by Surface Technology, Inc. (STI) of Princeton Junction, New Jersey, to determine whether there is a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation of certain composite diamond coated textile machinery components into the United States, or in their sale. 48 Fed. Reg. 38907 (August 26, 1983). The complaint alleged that such importation or sale constitutes unfair methods of competition and unfair acts by reason of: (1) infringement of claims 1-4 and 7-14 of U.S. Letters Patent Re. 29,285 (the '285 patent); (2) infringement of claim 1 of U.S. Letters Patent 3,904,512 (the '512 patent); and (3) unreasonable restraint of trade with respect to warranty services for the imported products. The complaint further alleged that the effect or tendency of the alleged unfair methods of competition and unfair acts is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to restrain or monopolize trade and commerce in the United States.

The notice of investigation named eight parties as respondents:

(1) Barmer Barmag Maschinenfabrik A.G., of the Federal Republic of Germany:

(2) Elektroschmelzwerk Kempten GmbH, of the Federal Republic of Germany;

(3) FAG Kugelfischer Georg Schaefer & Co., of the Federal Republic of Germany;

(4) Schubert & Salzer Maschinenfabrik A.G., of the Federal Republic of Germany;

(5) Schubert & Salzer Machine Works Co., of Pendeleton, South Carolina;

(6) Schlafhorst & Co., of the Federal Republic of Germany;

(7) American Schlafhorst Co., Inc., of Charlotte, North Carolina; and

8) American Barmag Corporation, of Charlotte, North Carolina.

At the prehearing conference on March 19, 1984, the issue of alleged infringement of claim 1 of the '512 patent and the alleged tying arrangements constituting unreasonable restraints of trade were withdrawn with prejudice by complainant. The evidentiary hearing commenced immediately after the conclusion of the prehearing conference that same day, and concluded on March 29, 1984.

On May 29, 1984, the Administrative Law Judge (ALJ) issued an initial determination (ID) that there is no violation of section 337 in the importation or sale of the composite diamond coated textile machinery components under investigation. Specifically, the ALJ determined that the four method claims of the '285 patent are invalid, that the imported articles under investigation do not infringe the remaining product claims of the '285 patent.

Complainant STI filed a petition for review of the ALJ's determinations regarding invalidity and infringement. Respondents filed two contingent petitions for review. No other petitions or agency comments were received.

Action

Having reviewed the record in this investigation, including the ID and the petitions for review, the Commission has determined to review the issue of the invalidity of the method claims of the '285 patent, and has affirmed the ALJ's determination. The Commission has also determined not to review the remainder of the ID, except that it takes no position regarding the ALJ's determinations as to the validity of the remainder of the patent claims and the issue of prevention of the establishment of an industry.

Order

Accordingly, it is hereby ORDERED THAT—

1. Complainant STI's petition for review with respect to the determination that claims 2, 12, 13, and 14 of U.S. Letters Patent Re. 29,285 are invalid as obvious under 35 U.S.C. § 103 is granted.

2. The determination of the ALJ that claims 2, 12, 13, and 14 of U.S. Letters Patent Re. 29,285 are invalid as obvious under 35 U.S.C. § 103 is affirmed.

3. The petitions for review of the other determinations contained in the ALJ's ID are denied, except that the Commission takes no position regarding the ALJ's determinations regarding the validity of the remaining claims of U.S. Letters patent Re. 29,285 and the issue of prevention of the establishment of an industry.

4. There is no violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in this investigation.

5. The Secretary shall serve copies of this Commission Action and Order upon each party of record to this investigation and publish notice thereof in the Federal Register;

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: July 23, 1984

In the Matter of CERTAIN COMPOSITE DIAMOND COATED TEXTILE MACHINERY COMPONENTS	Investigation No. 337-TA-160

COMMISSION OPINION

The Administrative Law Judge (ALJ) issued an initial determination (ID on May 29, 1984, in Certain Composite Diamond Coated Textile Machinery Components, Inv. No. 337-TA-160, in which he determined that there was no violation of section 337 of the Tariff Act of 1930 1/ on the basis that: (1) certain claims of the patent involved are invalid; and (2) the remaining claims of the patent are not infringed by the imported articles in question. The ALJ found all the other elements of a violation of section 337 to exist.

We agree with the ALJ that there is no violation of section 337, but we have determined to review the ALJ's determination on invalidity of certain patent claims. We affirm the ALJ's conclusion that claims 2, 12, 13, and 14 of U.S. Letters Patent Re 29,285 are invalid as obvious under 35 U.S.C. § 103. We have determined to take no position regarding the ALJ's determinations as to the validity of the remainder of the patent claims and the issue of prevention of the establishment of an industry.

1/ 19 U.S.C. § 1337.

BACKGROUND

On July 13, 1983, Surface Technology, Inc., of New Jersey (STI), filed a complaint with the Commission alleging unfair methods of competition and unfair acts in the importation of certain composite diamond coated (CDC) textile machinery components into the United States, or in their sale. The Commission instituted this investigation on August, 17, 1983; notice of the investigation was published in the Federal Register on August 26, 1983. 2/ The notice named eight parties as respondents: Barmer Barmag Maschinenfabrik A.G., of the Federal Republic of Germany; Elektroschmelzwerk Kempten GmbH, of the Federal Republic of Germany; FAG Kugelfischer Georg Schaefer & Co., of the Federal Republic of Germany; Schubert & Salzer Maschinenfabrik A.G., of the Federal Republic of Germany; Schubert & Salzer Machine Works Co., of Pendleton, South Carolina; W. Schlafhorst & Co., of the Federal Republic of Germany; American Schlafhorst Co., Inc. of Charlotte, North Carolina; and American Barmag Corporation, of Charlotte, North Carolina. Judge Saxon was designated as the ALJ in this investigation. 3/

The prehearing conference in this investigation commenced on March 19, 1984, before Judge Mathias. The evidentiary hearing commenced immediately after the conclusion of the prehearing conference that same day, and concluded on March 29, 1984.

2/ Notice of Investigation, 48 Fed. Reg. 38907 (August 26, 1983).

3/ For reasons of judicial economy and administrative necessity, Judge Saxon was relieved on March 9, 1984, and Judge Mathias was designated as the presiding officer.

The Products

The products at issue in this investigation are textile machinery components, primarily texturizing discs, open-end spinning rotors, and combing rolls. 4/ Wear-resistant surfaces containing uniformly dispersed micron-sized diamond particles in a metallic matrix are applied to these components by an electroless plating process. 5/ This process has come to be known in the industry as composite diamond coating, and the products so coated are identified by the textile industry as composite-diamond-coated or CDC components. 6/ These components are mounted onto large textile machines, known as "main-frames." 7/ Raw synthetic or natural fiber runs through the main-frames, in contact with these components, which comb or beat the fibers, texturize them, or spin them into yarn. 8/ These processes entail substantial wear on the components which come into contact with the raw fibers, and the highly wear-resistant CDC coatings are used to minimize wear and the subsequent need for replacement parts and resultant down-time. Textile machinery components are a major use of the CDC technology. 9/

4/ Finding of Fact (FF) 14.

5/ FF 15. Electroless plating is the chemical reduction of metal ions out of an aqueous solution onto a catalytic surface, as opposed to electrolytic or electro-plating, which accomplishes the same end with the aid of electric current. FF 25, 172.

6/ FF 15.

7/ FF 17.

8/ FF 17.

9/ FF 16.

The Patent

U.S. Letters Patent Re. 29,285 (the '285 patent), entitled "Method for Concomitant Particulate Diamond Deposition in Electroless Plating, and the Product Thereof," issued to Christini et al. on June 28, 1977. It was a Reissue of U.S. Letters Patent 3,936,577 (the '577 patent) issued to Christini et al. on February 3, 1976. The '577 patent issued on the basis of application Serial No. 208,233, filed on December 15, 1971. DuPont was the assignee of the '577 patent and the '285 patent, and in turn assigned the '285 patent to complainant STI on January 24, 1980. A reexamination certificate confirming the claims of the '285 patent as amended and adding eight new claims was issued on July 5, 1983.

The '285 patent is concerned with a method for concomitant diamond deposition in electroless plating, and the product thereof. It involves the co-deposition of diamonds and metal from a solution onto a substrate. The metal ions are chemically reduced out of an aqueous solution onto a catalytic surface, forming the "metal matrix." At the same time, the micron-sized diamond particles, which are in suspension in the solution, settle onto the surface and are trapped, becoming included in the coating as the reduction of the metal ions continues. There are 14 claims in the reexamined '285 patent — 10 product claims and 4 process or method claims (claims 2, 12, 13, and 14).

Patent Validity

Under 35 U.S.C. § 282, patents are presumed to be valid. The burden of proving invalidity is on respondents. The ALJ found claims 2, 12, 13, and 14 (the method claims) of the '285 patent invalid as obvious under 35 U.S.C. § 103. Section 103 provides that a claimed invention is not patentable "if the difference between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

The ALJ, considering the entire prosecution history of the patent and the prior art of record in this investigation, concluded that the method claims are invalid as obvious in light of the prior art. 10/

While we agree with the ALJ's ultimate legal conclusion on this issue, we note that he did not specifically address each underlying factual determination on which his conclusion was based. As the ALJ noted, the appropriate analysis under 35 U.S.C. § 103 is that set out by the Supreme Court in Graham v. John Deere Co., 383 U.S. 1 (1966):

> Under section 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the art to be resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

Complainant STI's petition for review argues that the ALJ's failure to make a specific finding of fact as to the level of ordinary skill in the art

---

10/ ID at 138.

is fatal to his conclusion that the method claims of the '285 patent are invalid as obvious. We do not agree. Viewing the ID as a whole, it is clear that the ALJ resolved this question. However, in view of his failure to specifically discuss the question of the level of ordinary skill in the art in the ID, we have examined the record in this investigation and reached our own conclusion on this issue.

Among the factors which can be considered in assessing the level of ordinary skill in the art are the educational level of the inventor, the various prior art approaches employed, the types of problems encountered in the art, the rapidity with which inventions are made, the sophistication of the technology involved, and the educational background of those actively working in the field. Orthopedic Equipment Co., Inc. v. All Orthopedic Applicances, Inc., 217 U.S.P.Q. 1281, 1285 (Fed. Cir. 1983). The parties in this investigation failed to present explicit testimony bearing on the level of ordinary skill in the art. However, the prior art, and the testimony and qualifications of the witnesses who were working in the field at the time of the invention, as well as those currently active in the field, provide us with sufficient evidence from which we can determine the level of ordinary skill in the art.

That the art in question in this investigation is a highly sophisticated one is indicated by the fact that the persons presently active in the field, as well as the inventors of the '285 patent, are all possessed of a high degree of technical qualifications, including advanced degrees and years of

experience. 11/ The prior art introduced into evidence includes patents and publications dealing with electroless plating, composite electro-plating, and production of diamond/metal composites for various industrial uses. 12/ Considering all the evidence in the record of this investigation, we conclude that the level of ordinary skill in the art is high, requiring at least an undergraduate degree in metallurgy or metallurgical engineering or several years of work experience in the field of composite plating.

When considered in light of the foregoing discussion, and the record in this investigation as a whole, we agree with and affirm the ALJ's conclusion that the method claims, 2, 12, 13, and 14, of the '285 patent are invalid as obvious under 35 U.S.C. § 103.

11/ Dr. Christini, one of the inventors of the '285 patent, has B.S., M.S., and PhD. degrees in Metallurgy and Material Science. Christini deposition, Complainant's Physical Exhibit (CPX) DD at 3. One of his co-inventors, Dr. Graham, has B.S., M.S., and PhD. degrees in Metallurgy. Graham Deposition, CPX EE at 2-3. Dr. Eustice, the other co-inventor of the '285 patent, has a B.S. degree in chemistry and a PhD. degree in metallurgy. Eustice Deposition, CPX FF at 4-5. Mr. Lukschandel, director of respondent ESK's plating operations, holds the German equivalent of an M.S. degree in Metallurgy. Evidentiary Hearing Transcript (Transcript) at 1811. Dr. Feldstein, owner of STI, has a B.S. degree in chemical engineering, and M.S. and PhD. degrees in physical chemistry, as well as several years of experience in the field of electroless plating. Transcript at 39-42.

12/ See ID at 45-46.