CIBA-GEIGY Patent
Coordination Meeting
Interlaken
May 21, 1987

The Court of Appeals for the Federal Circuit (CAFC) and Recent CAFC Decisions

Chemical Decisions with Obviousness Issues

Introduction

It is an absolute thrill for me to be here at Interlaken and participate in the very first CIBA-GEIGY World-Wide Patent Coordination Meeting. I'm also very happy with the topic that was assigned to me. The reason my topic this morning is near and dear to my heart and is a topic I can really warm up to, is that I had some personal involvement in the formation of the CAFC and in getting Judge Newman on its bench. (Judge Newman is, of course, the Polly Newman whom Dr. Stamm and the gentlemen from Manchester will remember very well from the FMC patent license negotiations a few years back.)

I was a member of special task forces of corporate patent counsel and fought for the establishment of the CAFC and the Newman elevation to the CAFC against considerable opposition. General attorneys did not like the idea of having a specialized court and private patent practitioners were opposed for pocket book reasons and Polly Newman was supposed to fall short on trial experience.

The CAFC is a very special institution in the Patent World and for this reason I want to talk first about what it is and what it does in general before I go into some of its recent decisions.

The CAFC, a Special Institution

The CAFC went into operation on October 1, 1982 and ushered in a new era. It's a combination of the former Court of Customs and Patent Appeals (CCPA) and Court of Claims and was formed to assume sole jurisdiction over appeals in patent cases from all federal district courts as well as to retain jurisdiction for appeals in patent and trademark cases from the Patent and Trademark Office. It was intended by this action to harmonize the varying bodies of law developed in the different Circuit Courts and to eliminate forum shopping.

The CAFC is actually not a specialized Patent Court. It has jurisdiction in such other areas as as government employment cases (e.g. several thousand air controller cases), taxes, customs etc. Nor is it a single court but actually several 3-judge courts. Only three judges (Chief Judge Markey and Judges Rich and Newman) have patent backgrounds.

And therein lies a problem. Judge Rich put it this way:

> "The way the court is run, even now, it can perfectly well happen that an important patent case with very complex issues in it could be heard by a panel of three judges with no patent-trained judges at all on it because the court sets up the panels in an arbitrary way, shifting people around continuously so that everybody sits with everybody else about the same number of times, and the cases are assigned to panels on an equally random basis by the clerk, who doesn't know who is going to be on the panel when he piles up the cases to be distributed. Which, to me, doesn't make much sense. You wouldn't go to a hospital to be operated on for eye surgery by a general surgeon or one with some other specialty. It's Congress's idea not to have specialized courts." (BNA-PTC), v. 32, p. 476, 481 (8/28/86)

The Changes Wrought by the CAFC

Due to the existence of the CAFC the patent system has been revitalized. Patents are more valuable and the courts "read the riot act" to infringers. This is, of course, good news to large patent holders and R&D-minded companies like ours. And this is proclaimed by such general business periodicals as "Fortune", "Dunn's Business Month" and "Chemical Week" which had articles in recent issues with such title's as "The Surprising New Power of Patents", "Patents: Potent Weapon for High Tech Companies", and "Washington's Pro Patent Court". The "Fortune" article about the "surprising new power of patents" carried the following interesting by-line.

> "Thanks mostly to a new appeals court, patent holders are winning many more suits against infringers. Damage awards have driven some defendants close to bankruptcy. Companies with patents are going on the offensive; infringers had better rethink."

These articles point out in a "then and now" comparison that before 1982 trial courts held patents invalid more often than not, normally assessed only "reasonable-royalty" damages and rarely granted double or treble damages so that it literally paid off to infringe.

Now the situation is drastically changed, mostly due to the CAFC but also due to more patent legislation and less antitrust enforcement. Many more patents are upheld and penalties for infringement have become severe. Nowadays, "patents create a formidable defense which may crush patent infringers with actual and even treble damages, post-infringement interest, attorney's fees, legal costs and a permanent injunction." (Trade Secret Reporter, p. 33, June 1986)

Consequently, there is a "growing respect for the power of patents and ... the need to manage differently as a result." One area in which we have to manage differently is e.g., the area of rendering validity/infringement opinions which now have to be solid, thorough, effective, based on a complete analysis of the patent, the file history and the prior art in order to avoid exposure to treble damages and other dire consequences.

And now let me make a brief aside. Would it not be an absolute irony to enter the golden age for patents and the patent system where patents are ever so much more valuable and enforceable and at that very point in time come under pressure to file fewer applications, abandon more pending applications and issued patents and miss patent opportunities all in order to save a few dollars when patent expenses are minuscule to begin with - never more than one or two percent - when compared to total R&D outlays?

Limits to Uniformity

However, as Judge Rich aptly pointed out also a

> "distinction must be made between uniformity in the law and uniformity in application of the law. There are aspects of patent law that require subjective judgement, ideally, judgment which is mature and based on long experience. The principal one is the determination of non-obviousness of inventions - 'the ultimate condition of patentability', which is the commonest point of attack on the validity of a patent. There is no gainsaying

that its determination is largely subjective and therefore on the same facts with the same rule of law, reasonable men may differ about it.

From my description of the way panels are made up from the pool of judges and the way cases are assigned to the panels, it should be apparent that what the world calls the Federal Circuit is not a single court but a very large number of 3-judge courts having unpredictable mixes of backgound and personality which will inevitably produce differing subjective opinions in close cases. Those subjective judgement calls by panels, when reviewed by the other judges before going out, as above described, are generally deemed to be sacrosanct."
(68 JPOS 618, 1986)

This distinction and this situation explain the kind of discrepancy illustrated by the Merck and Hybritech decisions discussed below. In the same vein, Judge Rich's reference to subjectiveness reminds me of the statement the famous law professor Carl Lewellyn made in his book "The Bramble Bush" to the effect that a decision a judge makes on any given day depends very much on the kind of breakfast he had on that day. And as regards Judge Rich's phrase "the ultimate condition of patentability", I'm reminded of what I now call the Lee Maxim, i.e. the statement Jerry Lee of the New York firm of Morgan and Finnegan made last summer at the ABA/PTC Section Meeting in New York City to the effect that if obviousness is the only attack on a patent or defense against a patent that you have you might as well forget it because patents are rarely invalidated for obviousness anymore.

While the CAFC has straightened out patent law in all areas where differences and discrepancies were rife among the circuits, e.g. need for synergism, combination inventions, secondary considerations like commercial success, etc. there are two areas, namely, inequitable conduct and public use and sale, in addition to abiding uncertainty in the area of obviousness for the reasons given, where the CAFC is still floundering. Our case In re Smith, 218 USPQ 976 (1983) - Airwick; CARPET-FRESH - is a good example. According to Polly Newman some CAFC judges hold the unreasonable view that if a blue print goes out that's public use and sale.

In re Grabiak

The first pair of cases I want to discuss is In re Grabiak, 226 USPQ 870 (1985) and In re Chupp, 2 USPQ 2nd 1437 (1987). In re Grabiak was one of the first Newman decisions which was the cause of a good deal of euphoria among patent practitioners.

In In re Grabiak the court stated that when chemical compounds have "very close" structural similarities and similar utilities, a prima facie case may be made out without any more showing. The court noted that under such circumstances, where close structural similarity to prior art compounds is shown, the burden of coming forward shifts to th applicant, and evidence affirmatively supporting unobviousness is required.

The Court went on to state, however, that

> "Analysis of those circumstances in which a prima facie case has or has not been made in view of the degree of the structural similarity or dissimilarity, or the presence or absence of similar utility between the prior art compound and that of the applicant, has inspired generations of applicants, courts and scholors. Upon review of this history, we have concluded that generalization should be avoided in so far as specific chemical structures are alleged to be prima facie obvious one from another. Although we do not accept Grabiak's argument that when biological activity is involved there can be no presumption (i.e., no prima facie case) of obviousness, in the case before us there must be adequate support in the prior art for the ester/thio ester change in structure, in order to complete the PTO's prima facie case and shift the burden of going forward to the applicant." (Id. at 871-872)

In In re Grabiak the applicant was claiming certain thiazole thiocarboxylates useful as herbicidal safeners. The prior art described similar thiazole carboxylic and thiazole

carboxamide compounds also useful as safeners. The difference between the prior art compounds and the claimed compounds was the replacement of an oxygen with a sulfur atom. The examiner also cited a reference to certain other structurally dissimilar safeners which had a ring system wherein one element of the ring could have been oxygen or sulfur. Further, the Board of Appeals stated that the close analogy between sulfur and oxygen was well known as a general chemical principle. The Board of Appeals also cited two CCPA cases for the proposition that oxygen and sulfur are well known to be interchangeable. Thesetwo cases had found the sulfur oxygen exchange to be obvious in view of prior art.

However, the Federal Circuit noted that the prior art cited by the examiner did not suggest the interchangeability of sulfur for oxygen in the ester moiety of the claimed compounds. Further, the court noted that in the cases cited by the Board of Appeals, the interchangeability of sulfur for oxygen was suggested in structures much more similar to the claimed compounds.

The court then repeated the statement found in In re Bergel, 130 USPQ 206, 208 (CCPA 1961) to the effect that the mere fact that it might be possible to find two isolated disclosures which might be combined to produce a new compound does not render that compound obvious unless the art also contains something to suggest the desirability of making this combination. In the absence of such a reference, the court held there was inadequate support for the PTO's position that this modification would prima facie have been obvious.

Finally, the court rejected the solicitor's attempt to argue that the activity of the claimed compounds was predictable from the prior art. As part of his argument in this regard, the solicitor cited that statement in the applicant's own application that the compounds were useful as safeners. The court rejected this out of hand, noting that if evidence of similar biological properties is to be relied upon, it must come from the prior art, and not from the applicant's own specification.

The significance of this decision in terms of the standards for prima facie obviousness is not to be underestimated. In In re Grabiak, the applicant was claiming a compound having the same properties as the prior art compounds. It is not apparent from reading In re Grabiak that the claimed compounds had superior properties, as compared to thecompounds cited in the prior art.

However, the applicant was not required to make any showing, since the PTO had failed to establish a prima facie case of obviousness. Thus, before a patent practitioner takes an examiner's rejection at face value, the rejection should be closely examined to see whether the prior art provides the necessary motivation for making the claimed substitution. In the absence of such a disclosure in the prior art, the evidentiary burden remains with the PTO, and no showing need be made by the applicant.

In re Chupp

In re Chupp - also a Monsanto case - was authored by Judge Markey. The subject matter was N-ethoxymethyl-2'trifluoromethyl-6'-methyl 2-chloroacetanilide useful as a herbicidal compound. The prior art via CIBA-GEIGY Swiss patents showed the corresponding ethyl compound. Applicant conceded prima facie obviousness, due to the adjacent-homology structural relationship. And in this case applicant submitted comparative showings including an opinion affidavit which interpreted and reinforced the factual affidavits. Superiority in terms of five times better activity was shown with respect to two weeds namely, quack grass and yellow nutsedge, in two crops namely, corn and soybeans. The examiner, however, persisted in rejecting the claims because the claimed compound would not be superior to the prior art compound for crops other than corn and soybean but the examiner allowed the method of use claims which became significant at the CAFC level. The Board affirmed the examiner's rejection because the claimed compound had no "new or unexpected property"; all were selective herbicides and had herbicidal utility and for other crops its herbicidal properties "as a whole" were only "so-so".

Judge Markey in his holding noted the allowance of the use claims and agreed with applicant that In re Papesch of 1963 vintage controlled. In re Papesch (137 USPQ 43) had held that the compound and all of its properties were inseparable and evidence of unexpected advantageous properties rebuts a prima facie case. Such evidence may include data showing that a compound is unexpectedly superior in a property which it shares(!) with prior art compounds. Markey further stated with reference to In re Papesch held "that a compound can be patented on the basis of its properties; it did not hold that its properties must produce superior results in every environment in which the compound may be used. To be patentable a compound need not excel over prior art compounds in all common properties." (Id at 1439.) For support Judge Markey relied on two CIBA-GEIGY cases namely United States v. CIBA-GEIGY Corporation, 211 USPQ 529 (D.N.J. 1979) and In re Ackermann, 170 USPQ 340 (CCPA 1971).

As regards Ackermann, Judge Markey stated

> To rebut a prima facie case of obviousness, Ackermann submitted evidence that the claimed compound was ten times more effective on polyester fibers than were the closest prior art compounds. The specification stated, however, that the claimed compound could be used as an optical brightener on a variety of materials. In affirming the examiner's rejection, the board said that the evidence of superiority on polyester fibers did not support the breadth of the claim, which covered the compound for all brightening purposes. The Court of Customs and Patent Appeals reversed, holding that the evidence of superiority on polyester fibers "pertain[ed] to the full extent of subject matter being claimed (i.e., the compound per se), and was enough to show that the compound possessed an unexpected difference in properties over the prior art.

And in the United States v. CIBA-GEIGY Corporation evidence had been adduced that hydrochlorothiazide (HCT) was also ten (!) times more potent than chlorothiazide (CT) and that consequently HCT could be administered to a patient in a smaller tablet than CT, which was significant as a matter of patient convenience. The compound claim was consequently held valid even though the court pointed out that HCT like CT was also a very useful diuretic and antihypertensive agent and this was true not because of any differences between the two drugs but rather because the drugs were similar in so many important ways, namely, as regards natriuretic effects, diuretic, and saluretic and antihypertensive effects, ability to potentiate other antihypertensive agents, safety of the two drugs in humans, side effects they produce, electrolite excretion patterns, tendency to cause hypokalemia, mechanism of action and duration of action.

In view of these holdings in the Ackermann decision as well as the United States v. CIBA-GEIGY decision, there should have been no need for an appeal in In re Chupp. But the PTO never gives up, especially with respect to what they call "overclaiming." In all these cases, i.e. Papesch, Ackermann, Chupp, the PTO was willing to grant use claims and only use claims to cover the unexpected properties. (Note also the position taken by the PTO in our case 5-11781/1+2/B/Cont/Cip/Cip.) Hopefully, Judge Markey's pronouncement in In re Chupp will straighten out the PTO once and for all:

> "The rejection here, though couched in §103 language, resolves itself into one based on 'undue breadth,' the PTO's concern being that a claim to the compound would forestall its use by others on crops other than corn and soybeans, even though such use would produce no more satisfactory, or even less satisfactory, results. The PTO's concern is misplaced. There is no set number of crops on which superiority must be shown, and the expectation that persons would want to use the compound to produce inferior results (or would want to fight lawsuits over such uses) is false. One of this court's predecessors pointed out the impropriety of 'undue breadth' rejections long ago. E.g., Ackermann, 170 USPQ at 343; ..."

In re Merck

The two most important decisions by the CAFC in 1986 on the obviousness standard are In re Merck & Co., 231 USPQ 375 and Hybritech v. Monoclonal Antibodies, 231 USPQ 81.

Merck and Hybritech confront some of the difficult, substantive aspects of the nonobviousness requirement: What is the impact of a degree of predictability in the art on the obviousness of an invention that results from arduous and expensive research that follows the predicted directions? How do we reconcile the two notions, on the one hand, that "obvious to try" is not the proper standard of obviousness, but, on the other hand, that absolute certainty is not required? What is the impact of the fact that others in the art were pursuing the same objective and achieved it independently soon after the inventors? The two decisions raise more questions than they resolve, especially since they appear to lean in opposite directions.

In Merck the patent claims under reexamination were to a method of treating human mental disorders involving depression by the application of amitriptyline (a certain tricyclic chemical compound). The PTO rejected the claims for obviousness in a statutory reexamination. The court affirmed.

The court first affirmed the PTO finding that the claimed method was prima facie obvious in view of the prior art. The PTO properly found prima facie obviousness based on prior art disclosures that:

(1) amitriptyline was a known compound and was known to possess properties such as a sedative; it was not known to possess properties as an anti-depressant;

(2) imipramine, a tricyclic compound that differed from amitriptyline only in having an unsaturated carbon atoms in the center ring instead of the nitrogen, was an effective known anti-depressant;

(3) the theory of "bioisosterism", a tool for predicting the properties of compounds, suggested that the biological activity of compounds would not be changed by the substitution of atoms or groups of atoms having similar size, shape and electron density;

(4) the substitution of nitrogen and an unsaturated carbon in the center ring of other similar tricylic structures did not affect pharmacological properties; and

(5) a research report by a company related the results of animal tests comparing the pharmacological properties of amitriptyline and imipramine and suggested that clinical testing of amitriptyline for depression alleviation should be conducted.

The court stated that "[s]tructural similarity, alone, may be sufficient to give rise to an expectation that compounds similar in structure will have similar properties." However, it stressed that the PTO did not rest its conclusions of prima facie obviousness on structural similarity alone. The teachings of the prior art provided a "sufficient basis for the required expectation of success, without resort to hindsight."

Second, the court held that the prima facie case of obviousness was not rebutted by evidence of unexpected advantages. As to evidence that amitriptyline had a more potent sedative and stronger anticholinergic effect than imipramine and that depressed patients have responded differently to the two compounds, it appeared that the difference in properties between the two compounds "is a matter of degree rather than kind."

Furthermore, both compounds showed only a slight differencein terms of sedative effects. The court noted that "in the absence of evidence to show that the properties of the compounds differed in such an appreciable degree that the

difference was really unexpected, [the Board did not err] in its determination that appellant's evidence was insufficient to rebut the prima facie case."

The court rejected the appellant's contention that the PTO had applied an impermissible "obvious to try" standard: "Obviousness does not require absolute predictability.... Only a reasonable expectation that the beneficial result will be achieved is necessary to show obviousness;" "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references."

Finally, the court noted that four other groups of inventors independently and contemporaneously discovered the antidepressant properties of amitriptyline based on a knowledge of investigative techniques, including the theory of bioisosterism, as to the effect of certain chemical structural changes on biological properties. Such independt develoment is evidence of the level of skill in the art at the time of the claimed invention.

This Merck decision, which Judge Newman called a "disaster" in a private conversation, came from a CAFC panel which did not include a patent-trained judge. Discarded concepts like "obvious-to-try" and "matter of degree rather than kind" still played a role. But Judge Baldwin who served on the CCPA for many years and wrote the Ackermann decision, dissented strenuously.

Hybritech v. Monoclonal Antibodies

In Hybritech the patent claimed an immunometric "sandwich assay" for determining the presence of antigens in body fluids that used monoclonal antibodies with a certain antigen affinity ("at least about 10 liters/mole"). The district court held the claims invalid for obviousness, based essentially on the finding that sandwich assays with polyclonal antibodies were known in the art and, given the development by others of techniques for producing monoclonal antibodies, it would have been obvious to use such monoclonal antibodies in such an assay.

The CAFC reversed, Judge Rich writing the opinion.

The first critical step in the court's analysis was its conclusion that the district court had erred in failing to afford the patentee a prefiling date of invention. This conclusion eliminated four of the eight major references relied upon by the district court to establish obviousness. The court then held that the district court's fact findings and

conclusions on obviousness over the prior art were erroneous. In fact, Judge Rich blasted the District Judge for adopting the Defendant's version verbatim.

In the CAFC's view, the district court erroneously applied an "obvious to try" analysis. That prior art references discussing the production of monoclonal antibodies may constitute "invitations to try monoclonal antibodies immunoassays" does not show obviousness since they "do not suggest how that end might be accomplished." Further, "[f]ocusing on the obviousness of substitutions and differences instead of on the invention as a whole ... was a legally improper way to simplify the difficult determintation of obviousness." "[T]he large number of references, as a whole, relied upon the district court to show obviousness about twenty in number, skirt all around but do not as a whole suggest the claimed invention, which they must, to overcome the presumed validity."

The court discounted evidence of development by others of the claimed technology after the patentee's date of invention. Such is "irrelevant for purposes of the hypothesis based on the three factual inquiries required by §103 as interpreted by Graham v. John Deere." "[S]imultaneous development may or may not be indicative of obviousness." Evidence of developmemts by others carried little probative value since they were more than a year after the patent application filing date and two years after the conception date.

Quite a different approach to this issue than seemed to be evident in the Merck opinion! Clearly, Judge Rich was impressed with the fact that plaintiff was a start-up company in the glamorous biotechnology field and was anxious to overlook deficiencies in their notebook keeping and otherwise give them the benefit of the doubt.

Conclusion

Unfortunately, in spite of all the CAFC-engendered unification and harmonization of our Patent Law, certainty and predictability in the areas of Sec. 103 are and will be elusive for the reasons given. But the patent-trained judges on the CAFC who love to "lecture" in their opinions to district court judges, CAFC brethren and patent attorneys have provided a good deal of guidance even on Sec. 103 issues. In ex parte prosecution, office actions with Sec. 103 rejections should first be scrutinized as to whether the Examiner has made out a prima facie case of obviousness. Except for cases of adjacent homology and close utility, the matter may be arguable. Comparative testing is expensive and time consuming and

comparative showings are obvious danger points in patent litigation. Even in prima facie cases of obviousness, consideration should be given to possible rebuttal by other than comparative test data. Lastly, it may be useful and advisable in given cases to cite and rely on our own cases In re Ackermann and United States v. CIBA-GEIGY Corp. In a more general vein, and in light of Judge Rich's age (84), another concerted effort is due to place at least one other patent-trained judge on the CAFC.

Karl F. Jorda