

# **Appellant's Reply Brief**

FILED  
U.S. COURT OF APPEALS FOR  
THE FEDERAL CIRCUIT

MAR 3 - 1993

REPLY BRIEF FOR APPELLANT IN RE KURIAPPAN P. ALAPPAT, FRANCIS X. GINDHART  
EDWARD E. AVERILL and JAMES G. LARSEN CLERK

---

IN THE  
UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

RECEIVED

---

Appeal No. 92-1381

'93 MAR -3 19:30

U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT

---

IN RE KURIAPPAN P. ALAPPAT,  
EDWARD E. AVERILL and JAMES G. LARSEN

---

ON APPEAL FROM A DECISION OF THE BOARD OF  
PATENT APPEALS AND INTERFERENCES IN  
SERIAL NO. 07/149,792 DATED APRIL 22, 1992.

---

Alexander C. Johnson, Jr.  
Peter J. Meza  
MARGER, JOHNSON,  
McCOLLOM & STOLOWITZ, P.C.  
621 S.W. Morrison Street, Suite 650  
Portland, Oregon 97205  
(503) 222-3613

Francis I. Gray  
TEKTRONIX, INC.  
P.O. Box 1000, M.S. 63-LAW  
Wilsonville, Oregon 97070  
(503) 685-4210

ATTORNEYS FOR APPELLANTS

## TABLE OF CONTENTS

	<u>PAGE</u>
TABLE OF AUTHORITIES	ii
INTRODUCTION	1
I. The PTO's Analytical Approach is Improper	2
A. The PTO's Approach Disregards the Recited Apparatus Character of the Claims	3
B. The PTO Approach Dissects the Claims Contrary to Controlling Authority	4
C. Whether a Claim Could Cover a Programmed Computer is Irrelevant	5
II. Section 112 ¶ 6 Limits Means-Plus-Function Claims Even Without Imputing Structural Limitations From The Specification	6
A. The PTO May Not Ignore § 112 ¶ 6 as a Rule of Construction.	6
B. The Purpose of § 112 ¶ 6 is to Preclude Giving Means-plus-Function Claims an Unduly Broad Interpretation.	7
C. Means-Plus-Function Claim Language is Limited as a Matter of Law.	8
III. Claim 15 Should be Held to Recite Statutory Subject Matter.	13
A. Claim 15 as a Whole is Directed to Distinct Apparatus	13
B. Favorable Decision on Claim 15 is Reconcilable with Prior Caselaw	14
C. Decision on the Merits is Badly Needed in Digital Electronics Arts	16
VI. Reply as to Jurisdiction Issues	17
A. This Court has Jurisdiction Regardless of the Legitimacy of the Expanded Board's Decision	17
B. The Commissioner's Authority to Constitute a New Panel is not Limited by Notions of Independence of the Board	20
CONCLUSION	21
CERTIFICATE OF SERVICE	24

## TABLE OF AUTHORITIES

<u>CASES</u>	<u>PAGE</u>
<i>In re Abele</i> , 684 F.2d 902, 214 USPQ 682 (CCPA 1982)	5
<i>Diamond v. Diehr</i> , 450 U.S. 175, 209 USPQ 1 (1981)	1,4,5, 6, 17
<i>In re Freeman</i> , 573 F.2d 1237, 197 USPQ 464 (CCPA 1978)	1
<i>In re Fuetterer</i> , 319 F.2d 259, 138 USPQ 217 (CCPA 1963)	10
<i>Graham v. John Deere</i> , 383 U.S. 1, 148 USPQ 459 (1966)	5
<i>In re Haas</i> , 486 F.2d 1053, 170 USPQ 623 (CCPA 1973)	19
<i>In re Iwahashi</i> , 888 F.2d 1370, 12 USPQ 2d 1908 (Fed. Cir. 1989)	5,7,17
<i>In re Noll</i> , 575 F.2d 141, 191 USPQ 721 (CCPA 1976) <i>cert. den.</i> 434 U.S. 875, 195 USPQ 465 (1977)	4
<i>Pennwalt Corp. v. Durand-Wayland</i> , 833 F.2d 931, 4 USPQ 2d 1737 (Fed. Cir. 1987)	9, 10
<i>In re Prater</i> , 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (Prater II)	3,4,5
<i>Rohm and Haas Co. v. Gottschalk</i> , 504 F.2d 259, 183 USPQ 257 (D.C. Cir. 1974)	19
<i>Texas Instruments, Inc. v U.S. Intn'l Trade Comm'n.</i> 846 F.2d 1369, 6 USPQ 2d 1886 (Fed.Cir. 1988); <u>reh. den.</u> 7 USPQ 2d 1414 (Fed. Cir. 1988)	9
<i>In re Wiechert</i> , 370 F.2d 927, 152 USPQ 247 (CCPA 1967)	18
<u>STATUTES</u>	<u>PAGE</u>
5 USC § 701-6	19
5 USC § 702	19
35 USC § 6(a)	17,20
35 USC § 7	17,20
35 USC § 101	passim
35 USC § 112	3
35 USC § 141	15,19
	20
35 USC § 112 ¶ 6	passim

## INTRODUCTION

The PTO analytic approach to the § 101 issue is improper because it distorts claim 15 by deleting some language and ignoring other language that is in the claim, and by imputing from the specification algorithms not recited in the claim. This approach is contrary to *Diamond v. Diehr*, 450 U.S. 175, 209 USPQ 1 (1981) which requires considering the claim as a whole. It is also improper under *In re Freeman*, 573 F.2d 1237, 197 USPQ 464 (CCPA 1978) to impute algorithms into the claim from the specification to make the claim recite a mathematical algorithm.

As a whole (as written), claim 15 is directed to a machine which performs a technologically and useful function: rasterization of digitized waveforms. Although this overall function is old, the particular combination of elements recited in the claim is new, as determined by the Examiner. This claim 15 is drawn to specific apparatus distinct from other apparatus capable of performing the same overall function.

The PTO appears to insist that the individual elements of claim 15 must distinguish over other (non-prior art) "apparatus capable of performing the identical functions." If so, that requirement would reintroduce notions of novelty to the § 101 analysis, impermissibly under *Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8.

Giving Section 112 ¶ 6 its intended meaning, it is unnecessary to read limitations into the claim from the specification to determine that a claim to a combination in means-plus-function has a limited scope.

I. The PTO's Analytical Approach is Improper

Claim 15 is directed to a machine, plainly statutory subject matter under 35 U.S.C. § 101. Disregarding its plain meaning, the PTO's approach distorts Alappat claim 15 into what it is not: merely an algorithm. This approach is summarized thusly:

1. Disregard the apparatus character of preamble;
2. Excise the "means for" language of the individual claim elements;
3. Construe the claim as broad enough to read on a programmed computer;
4. Impute algorithms from the specification into the remaining claim language; and
5. Construe the reformulated claim to see if it is statutory, ignoring the recited signal processing function (conversion of time-sampled waveforms into anti-aliased pixel intensities for raster display) and emphasizing the mathematical aspects of the supporting disclosure (again by reference to the specification).

The *amicus* brief of Seagate Technology Inc. (STI) leaves in the "means for" language, but otherwise follows essentially the same analysis (STI Br. 6-7) and reaches the same result (STI Br. 12).

A. The PTO Disregards the Recited Apparatus Character of the Claims

The PTO cites *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969) ("*Prater II*") for the proposition that, during prosecution, claim language is given its broadest reasonable interpretation, and limitations appearing in the specification are not to be read into the claims. (PTO Br. 8)

The PTO ignores, however, the holding of *Prater II*--that apparatus claim 10 to a system for spectrographic analysis was per se statutory subject matter as directed to a machine within the meaning of 35 U.S.C. § 101. This invention was claimed in means-plus-function format broad enough to cover a programmed general purpose computer, as well as the electromechanical machine disclosed in the specification. The corresponding process claims were held not patentable under § 112 ¶ 2 because they did not expressly recite limitations to a "machine process." The Court distinguished the apparatus claim as being directed to a machine on the basis of its means-plus-function language, as expressly permitted by the third (now sixth) paragraph of 35 U.S.C. § 112. 415 F.2d at 1406, 162 USPQ at 551-552.

In this case, under the rubric of "broadest interpretation," the PTO disregards recitals in claim 15 that make clear that what is claimed is, literally, a machine. Merely giving effect to what is recited in the claim -- the preamble, the "means for" terms, and the recited conversion of digitized waveforms into rasterized pixel intensities-- establish that the claim is directed to a "machine" within the meaning of § 101. This interpretation would be sufficient and nothing would need to be read

into the claim to reach this result under *Prater II*.

*Prater II* has never been overruled. As fashions change, the formulation of the question of statutory subject matter of computer related inventions has changed—from "mental step" to "mathematical algorithm." But that does not discredit the holding in *Prater II*. On the contrary, that holding is consistent with current controlling case law.

*In re Noll*, 545 F.2d 141, 191 USPQ 721 (CCPA 1976), *cert. den.* 434 U.S. 875, 195 USPQ 465 (1977) is a post-*Benson* case holding that claims very similar to those now on appeal were statutory. The recital of "N-bit storage devices" in the *Noll* claim is a weak basis for distinguishing that case. (See PTO Br.43). Any digital computer contains N-bit storage devices as recited in *Noll*.

B. The PTO Approach Dissects the Claims Contrary to Controlling Authority

The PTO did not consider *Diamond v. Diehr*, 450 U.S. 175, 209 USPQ 1 (1981), either in the Board decisions or in the PTO brief. The Supreme Court held algorithm-based software-implemented claims to a method for controlling rubber molding to be statutory. The Supreme Court stated: "claims must be considered as whole. It is inappropriate to dissect the claims into old and new elements and then ignore the presence of the old elements in the [§ 101] analysis." 450 U.S. at 188, 209 USPQ at 9.



Rather than dissecting the claims into old and new parts, the PTO now dissects them differently. The PTO analysis now disregards the apparatus character of the preamble and excises the "means for" apparatus terminology of the Alappat claim elements.

This approach is contrary to the Supreme Court's mandate that the "claims must be considered as a whole." *Diehr, supra.*; See *Graham v. John Deere*, 383 U.S. 1, 32, 148 USPQ 459, 472 (1966). It is inconsistent with Federal Circuit and CCPA decisions which uniformly dictate that the claims must be considered as a whole. *In re Iwahashi*, 888 F.2d 1370, 1375, 12 USPQ2d 1908, 1911 (Fed. Cir. 1989) (quoting *Walter*); *In re Abele*, 684 F.2d 902, 907, 214 USPQ 682, 687 (CCPA 1982) (quoting *Sarkar*). And the PTO approach leads to a conclusion opposite *Prater II*.

C. Whether a Claim Could Cover a Programmed Computer is Irrelevant

The Board found that claim 15 could cover a programmed computer. Appellants do not disagree. Indeed, they would hope so. Microprocessors might soon be fast and cheap enough to provide a practical implementation of their invention--the best mode of which is now the hardware disclosed in the application. Aside from speed and performance, programmed computers can routinely be substituted for special purpose digital circuitry. After all, a general purpose computer is essentially a generalized digital circuit configured to a special purpose by programming (See STI Br. 6, n. 3).

That a claim could cover a programmed computer, however, does not make it a legal pariah. *Diehr* states: "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program or digital computer." 450 U.S. at 187, 209 USPQ at 8.

Moreover, a means-plus-function claim is not legally unlimited in scope.

## II. Section 112 ¶ 6 Limits Means-Plus-Function Claims Even Without Imputing Structural Limitations From the Specifications.

### A. The PTO May Not Ignore § 112 ¶ 6 as a Rule of Construction.

The § 101 statutory subject question asks: What does the claim cover?--a statutory class (machine, process) or merely a mathematical algorithm?

This issue necessarily requires the claim to be construed--not for infringement but for statutory subject matter. Presumably, the PTO always does this in the first instance during examination.

Section 112 ¶ 6 is a statutory rule of claim construction that does two things:

1. reversing *Halliburton*, § 112 ¶ 6 sustains validity: a combination claim is not invalid because its elements define the invention in merely functional terms -- what it does rather than what it is; and
2. it dictates how a claim element stated in means-plus-form is to be construed.

Thus, we have a non-infringement issue that requires the PTO to construe the claims and we have a statutory rule of claim construction in § 112 ¶ 6.

The threshold question can be put simply: Does § 112 ¶ 6 apply in any way to claim construction (or "interpretation") by the PTO, or is the PTO free to ignore § 112 ¶ 6 altogether?

Neither the Patent Act nor *Federico* nor *Zinn* says that § 112 ¶ 6 applies exclusively to infringement or that PTO is exempt from its strictures. This silence implies that the PTO must apply § 112 ¶ 6 in construing (or "interpreting") claims. The *Iwahashi* case states: "Section 112 ¶ 6 cannot be ignored when a claim is before the PTO any more than when it is before the courts in an issued patent." 888 F.2d at 1375, n. 1, 12 USPQ2d at 1911, n. 1.

B. The Purpose of § 112 ¶ 6 is to Preclude Giving Means-plus-Function Claims an Unduly Broad Interpretation.

The PTO excises the "means for" terms of claim 15 and ignores the apparatus character of such terms and their supporting disclosure. It thereby construes the claims so as to be unduly broad and to exceed the disclosure--i.e., as universally applicable algorithms rather than a machine operating according to algorithms. This approach is contrary to the basic intent and purpose of § 112 ¶ 6 as acknowledged by the PTO.

The PTO argues that "§ 112, ¶ 6 was enacted to implement the reverse

doctrine of equivalents as a solution to the problem of undue breadth in *Halliburton*, rather than to define the invention over the prior art." (PTO Br. 28). The PTO also states "the intent of § 112 ¶ 6 [is] to allow claiming in means-plus-function format that exceeds the scope of the enabling disclosure." (PTO Br. 29)

Accepting these propositions, note that these are not infringement concerns but matters of claim patentability--first and foremost the province of the PTO. Moreover, the intent and purpose of § 112 ¶ 6, as acknowledged by the PTO, implies that claims in means-plus-function format are not to be construed so as to be unduly broad or to exceed the scope of disclosure. Yet that kind of construction is the linchpin of the PTO analysis of claim 15.

If the threshold answer is that the PTO cannot ignore § 112 ¶ 6, then the question remains: How to apply § 112 ¶ 6?

C. Means-Plus-Function Claim Language is Limited as a Matter of Law.

1. The narrowing construction of means-plus-function claims applies to the § 101 statutory subject matter issues.

Prior to the 1980's, many agreed with the PTO view that means-plus-function claims should be interpreted broadly, both in examination and infringement. Practitioners routinely drafted means-plus-function claims, thinking that such claims would be construed in infringement to cover virtually any means for performing the

recited functions. Recently, however, this Court has laid those hopes to rest in cases like *Texas Instruments, Inc. v. U.S. Intn'l Trade Comm'n*, 846 F.2d 1369, 6 USPQ 2d 1886 (Fed.Cir. 1988); reh. den. 7 USPQ 2d 1414 (Fed. Cir. 1988) and *Pennwalt Corp. v. Durand-Wayland*, 833 F.2d 931, 4 USPQ 2d 1737 (Fed. Cir. 1987). These cases made clear that § 112 ¶ 6 operates to narrow means-plus-function claims, at least in the infringement context.

The PTO takes the position that broadly written means elements appear to cover all possible ways of doing the functions recited in the claim. At the same time, the PTO argues that § 112 ¶ 6 applies only to infringement concerns. These positions are inconsistent.

The argument that a means plus-function claim like Alappat claim 15 preempts an algorithm is essentially the same concern: Would anyone using the algorithm infringe the claim?

2. The requirement that means-plus-function elements be used in combination claims avoids preemption of an algorithm

When one considers that "means" elements are allowed by § 112 ¶ 6 only as an element of a combination, it follows that the arguably broad functional language in a means element does not preempt all possible ways of doing either the function recited in the means element or of the invention as a whole.

The CCPA in *In re Fuetterer*, 319 F.2d 259, 138 USPQ 217 (CCPA 1963) held that § 112 ¶ 3 applies to claim interpretation by the PTO. The Court further held that, where novelty lies in the combination of elements, the fact that an element is expressed in terms of what it does, rather than what it is, is permissible because such a claim does wholly preempt the result produced by the invention. The CCPA held that such broad functional language in an element of a combination was specifically sanctioned by § 112 ¶ 6. The CCPA noted in footnote 11 that it was Congress's intent to restore the law regarding broad functional language in combination claims to its state prior to *Halliburton*.

3. The "shall be construed" language of § 112 ¶ 6 precludes interpreting means-plus-function elements as covering "any and every means."

A second limitation Paragraph 6 is the so-called reverse doctrine of equivalents. Attempts by a patentee to assert that his patent covers something he truly did not invent, even though covered by the literal language of the patent claim, can be met in court by the reverse doctrine of equivalents. *Pennwalt Corp. v. Durand-Wayland*, 833 F.2d 931, 4 USPQ 2d 1737 (Fed. Cir. 1987).

A means-plus-form claim element is not *merely* functional, because it is limited by § 112 ¶ 6 to what is described in the specification and equivalents. Take away the last clause of Paragraph 6, and ignore the apparatus implication of "means"

and the element is once again merely functional, thereby gutting the basic purpose of § 112 ¶ 6: to reverse the holding in *Halliburton*. This is what the PTO's "any and every means" interpretation does.

4. Recognizing the Limiting Effect of § 112 ¶ 6 is Sufficient.

It is enough in the § 101 context to recognize that § 112 ¶ 6 limits the scope of means-plus-function claims. This alone does not require imputing structure from the specification. And to the extent that one looks to the specification to understand what is claimed, in the § 101 context, reviewing the disclosure itself is sufficient to determine whether the claim encompasses statutory subject matter.

The PTO's argument focuses excessively on the "equivalents" aspect of § 112 ¶ 6. The PTO argues that "the word 'equivalents' in § 112 ¶ 6 also compels the conclusion that the 'shall be construed to cover' language of § 112 ¶ 6 applies only in the infringement context." (PTO Br. 20)

The PTO uses the formulation "construed to cover" and "equivalents" several times (PTO Br. 19, 20, 27). Each time, the PTO argument ignores a significant part of the last clause of § 112 ¶ 6: "shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof." The underlined portion is the central concept of this clause. Without it, "equivalents thereof" is meaningless. Conversely, even omitting the "equivalents" language, the clause as a whole remains meaningful.



The PTO formulation "construed to cover" and "equivalents" could be merely convenient shorthand. Alternatively, it belies a preoccupation with the "equivalents" aspect of § 112 ¶6. Either way, it overlooks the mandate to construe means-plus-function language to cover the corresponding structure described in the specification. The PTO's concerns about the difficulty of examining "equivalents" in § 102/103 examination is not without merit. But these concerns are not material to the § 101 issue.

Differences of the claimed structure over the prior art are not the basis for determining statutory subject matter. If the claim language is construed to cover the disclosed structure, and that structure is statutory subject matter, that should be sufficient: the claim includes statutory subject matter. Whatever equivalents exist must be -- according to § 112 ¶ 6 -- equivalents of what is disclosed in the specification, i.e., a machine.

Use of § 112 ¶ 6 means-plus-function format should not, as a matter of law, imply preemption of any mathematical algorithm. The PTO approach of giving means-plus-function claims their broadest interpretation without regard to the limiting effect of § 112 ¶ 6 predisposes the question toward a finding of preemption. Recognizing the constructional limitations of § 112 ¶ 6, on the other hand, avoids biasing the § 101 analysis toward a finding of preemption.



III. Claim 15 Should be Held to Recite Statutory Subject Matter.

A. Claim 15 as a Whole is Directed to Distinct Apparatus

Claim 15 is directed to a combination comprising means-plus-function elements which sequentially convert waveform samples into rasterized pixels with intensities which anti-alias the resultant displayed waveform. The claimed rasterizer performs the same overall function as prior art rasterizers. It does so, however, in a different way - recited in the combination of the four elements - which combination the Examiner acknowledged as patentably distinct from prior art rasterizers.

Fundamentally, the PTO refuses to take Alappat's claims at face value. Literally, claim 15 is directed to apparatus. On its face, it claims a machine of known type -- a rasterizer -- and the overall structure and operation of a unique type of such machine, which converts a digitized input waveform into anti-aliased pixel intensities for display. It has an element that determines the vertical distance -- a physical quantity -- between endpoints of vectors. It also has an element that determines an elevation of a row of pixels spanned by the vector. This elevation is also a physical quantity. A third element normalizes the elevation and distance, and a fourth element output pixel intensities as predetermined function of the normalized quantities.

By its own terms, the claim 15 machine is limited: first, to rasterization of digitized waveforms to produce pixel intensities and, second, to the particular

combination -- acknowledged by the Examiner as novel -- for carrying out the overall operation. Adding the implicit limiting effect of § 112 ¶ 6 reinforces the statutory character of claim 15. Even if construed to cover an implementation of the invention in a programmed general purpose computer, claim 15 would nonetheless be directed to a "machine" within § 101.

B. Favorable Decision on Claim 15 is Reconcilable with Prior Caselaw

In deciding this case, we do not ask this Court to overrule the *Lundberg*, *Henatsch* and *Sweet* cases, as implied by the PTO (PTO Br. 26). The Court should merely recognize that that line of cases deals with § 112 ¶ 6 in the prior art § 102/103 context, not in the statutory subject matter context. Congress's alleged reenactment of § 112 ¶ 6 (PTO Br. 25 and 29) is inapplicable for the same reason.

The difference in context is significant. In § 102/103 examination, the point of the question is necessarily one of claim scope. The claim should not literally read on the prior art. If it does, the claim can be distinguished easily by amendment to recite differences over the prior art.

In the § 101 context, the issue is different in two respects. One, it is not claim scope that is at issue, it is whether the claim includes statutory subject matter. The claim may include nonstatutory subject matter as long as the claim as a whole also includes statutory subject matter. Two, under the § 101 case law as it has developed, it has never been clear how to amend a claim rejected under § 101. The

prosecution history in this case is illustrative.

The Office Actions rejecting the claims under § 101 contain a compilation of rules extracted over the years by the PTO from various § 101 cases. Rejecting Alappat claims 1-14, and later claims 15-19, the Examiner stated the same thing:

6. Recitation of data gathering steps inherently required to carry out the algorithm and displays which merely provide a visual representation of the result of the algorithm do not preclude a holding of preemption. Likewise, recitation of elements such as CPUs, memories and program controllers which perform the function of "number crunching", that is, solving mathematical algorithms and are not themselves distinct from other apparatus capable of performing identical functions no [sic] not preclude a holding of preemption.

7. Present claim 15 recites in the preamble that conversion of an input waveform into anti-aliased pixel illumination intensity data, however, the recited means are merely used for calculating the results of the mathematical algorithm. In element (a) a vertical distance between endpoints is determined, (b) the elevation is determined, (c) the vertical distance and elevation are normalized, and (d) the illumination intensity data as a result of a predetermined function is displayed. Again, the use of physical elements to provide the "number crunching" is not considered patentable. The mere display of illumination intensity data is not considered significant post solution activity.

(A-228 to A-229)

This Action makes clear that adding express recitations of the electronic circuits used in each means would not suffice to overcome the rejection. Indeed, the dependent claims 16-19 that do so were also rejected. Similarly, adding the waveform source or the display means to the claim, as suggested by *amicus* Seagate (STI Br. 13-14) would be unavailing. In fact, it was. Original claim 7 (A-64) contained recitations of both screen display and waveform data source, and was

rejected under § 101, although allowable under § 102/103.

C. Decision on the Merits is Badly Needed in Digital Electronics Arts

The above-quoted reasoning of the Office Action is applicable to most, if not all, digital electronic systems. So too is the expanded Board's analysis: "What the means do in this case is to perform mathematical operations on data, how they do it is also mathematical,..." (A-21). Together, they leave no way to amend claims to digital electronics inventions to avoid a § 101 "algorithm" rejection.

The foregoing analysis suggests a way to apply § 112 ¶ 6 in examination of claims for statutory subject matter under § 101. Such claims should be construed to cover at least the corresponding structure or acts disclosed in the specification.

This approach is consistent with the intent and purpose of § 112 ¶ 6 as expressed by the PTO (PTO Br. 28-29). It precludes interpretation of the claim as unduly broad, i.e., as merely claiming an algorithm rather than a useful machine or process. It is based on the enabling disclosure. It avoids subjecting claims to all digital electronics inventions to the cost, delay and uncertainty of the two-step analysis.

The PTO's approach jeopardizes validity of many tens of thousands of issued digital electronics patents on statutory subject matter. If approved, the PTO approach would make it impossible to validly claim digital systems in means-plus-function form, denying § 112 ¶ 6 to the inventors thereof. Historically, digital electronics inventions have been accepted as statutory subject matter without question. Until

recently, means-plus-function claims to such invention have been accepted as routine. The PTO approach in this case, however, would render virtually all such claims under §112 ¶6 nonstatutory.

This Court did not change the status quo by its decision in *Iwahashi*, 888 F.2d 1370, 12 USPQ 2d 1908 (Fed Cir. 1989), as viewed by the PTO (PTO Br. 30). It is the PTO that has done so, by expanding the reach of old § 101 software cases and of even older § 102/103 cases, without reference to superseding authority: *Diamond v. Diehr*, 450 U.S. 175, 209 USPQ 1 (1981).

As the PTO acknowledged (PTO Br. 31), "Considerations in favor of stare decisis are at their acme in cases involving property and contract rights, where reliance interests are involved." (citations omitted)

#### IV. Reply as to Jurisdiction Issues

Appellants agree with the PTO position on the jurisdictional issues posed by the Court, with one exception, on Issue 2, and with added views on Issue 1.

##### A. This Court has Jurisdiction Regardless of the Legitimacy of the Expanded Board's Decision.

Regarding Issue 2, the PTO responds:

"If the Commissioner lacks authority to designate an expanded panel, then this Court lacks authority to reach the merits." (PTO Br. 72)

The PTO does not address the further question: Where would such an outcome leave this case? Does the expanded Board's non-decision stand and can the Commissioner still refuse to grant the patent? Or, is it vacated and the first panel's decision given effect?

*Amicus* Intellectual Property Owners (IPO) supports the PTO on the first and third issues, it does not address the second issue (IPO Br. 3).

*Amicus* Federal Circuit Bar Association (FCBA) generally takes a contrary position to that of the PTO on these issues, except that FCBA agrees on issue 2 that if, as FCBA contends, the expanded Board decision is a nullity, then this Court lacks jurisdiction to reach the merits (FCBA Br. 1, 11, 17). FCBA addresses the further question only tangentially, stating that "the only valid decision being the decision of the first panel." (FCBA Br. 11). This suggests but does not state that the second decision might be vacated. It is not clear, however, that this Court's jurisdiction would extend even that far. If the Court has no jurisdiction to reach the merits, how can it overturn the last "decision" on the merits (even if illegitimate) ?

One approach is simply to recognize that the expanded Board's decision, whether or not legitimate, still purports to be a decision under color of authority of the Board, and will be followed by the PTO unless and until reversed. In the *Wiechert* case, only Judge Smith thought that the Board decision was a nullity and would have dismissed the appeal without decision. *In re Wiechert*, 577 F.2d 927, 940, 152 USPQ 247, 253 (CCPA, 1967).

Another approach is to recognize that the expanded Board's decision amounts to final action: refusal of a patent to Alappat et al. Congress has made clear its intent to make Federal administrative final actions subject to judicial review in 5 U.S.C. § 702. *Rohm and Haas Co. v. Gottschalk*, 504 F.2d 259, 183 USPQ 257 (D.C. Cir. 1974), holds that the PTO Board's refusal to accept an appeal is subject to judicial review under 5 USC § 702. *Rohm and Haas* cited and followed *In re Haas*, 486 F.2d 1053, 179 USPQ 623 (CCPA 1973).

In *Haas*, the PTO solicitor contended that "the Board's dismissal was not the type of 'decision' required by 35 U.S.C. 141 to confer appellate jurisdiction upon this court." 486 F.2d at 1054, 179 USPQ at 624. Rejecting this contention, the CCPA reasoned that its subject matter jurisdiction depended upon whether the Board reviewed an adverse decision of the examiner relating at least indirectly to a rejection of the claims, and held, "We find that the action taken by the Examiner did in fact amount to a rejection of claims 1 and 2." 486 F.2d at 1056, 179 USPQ at 625. The Court determined that this action was not one where review was restricted to petition and judicial review under 5 U.S.C. § 701-6 because it was within CCPA jurisdiction.

*Haas* does not address the legitimacy of an expanded Board's decision, but is precedent for the proposition that the key question under 35 U.S.C. § 141, as under 5 U.S.C. § 702, is whether the purported decision of the Board constitutes final action. The final action in this case remains: denial of the patent to Alappat et al. Impropriety, if any, in Board proceedings leading to that action should not divest this

Court of jurisdiction to review the action.

B. The Commissioner's Authority to Constitute a New Panel is Not Limited by Notions of Independence of the Board.

The first issue has been fully briefed except on one point. The prior briefs address the question of independence of the Board. They overlook, however, the asymmetry of 35 U.S.C. § 141. Only the applicant for a patent may appeal an adverse decision to this Court. The Commissioner may not do so. Since 35 U.S.C. § 141 has been reenacted several times since the 1927 debates about Board independence (FCBA Br. 6-10, IPO Br. 6-10), it is safe to infer that Congress did not think the Commissioner needed a right of appeal by virtue of control over the Board under 35 U.S.C. § 7 and rule-making authority under 35 U.S.C. § 6(a).

Regarding the rule-making authority, the PTO routinely publishes Notices in the *Official Gazette*. Examples include the Notices on § 101 and § 112 ¶6 cited in prior briefs. These amount to regulations interpreting the patent laws and promulgating PTO policies on application of § 101 and § 112 ¶ 6. Presumably, the Board is bound to follow those Notices, until revoked or stricken down by this Court as not in accordance with law. Meanwhile, however, it appears that the Commissioner has the lawful authority both to promulgate such Notices and to enforce them.

This Court has proper jurisdiction and should decide the merits of this case.



## CONCLUSION

Claim 15 is statutory subject matter under 35 USC § 101. Considering the claim as a whole, it is directed to a machine according to the language of the claim itself. The claimed machine has technological utility in rasterizing digitized waveforms for visual display. It is defined in claim 15 as comprising a combination of functional elements, as permitted by 35 USC § 112 ¶ 6.

Given the remedial purpose of § 112 ¶ 6 -- to validate functionally-defined claiming over objections of undue breadth -- the PTO cannot ignore ¶ 6 and reject a means-plus-function claim as "so broad that it encompasses any and every apparatus for performing the recited functions." (PTOBr. 6) This analysis does not require imputing any limitations to the claim from specification under the "construed to cover" clause of § 112 ¶ 6. It is only necessary to give legal effect to the statute in precluding an "any and every means" interpretation of the claim.

Claim 15 is directed to a combination. Even if any claim element is deemed to recite a mathematical algorithm, the use of an algorithm in an element of a combination cannot possibly preempt that algorithm from use in other combinations.

None of the individual elements of claim 15 directly or indirectly recite a "mathematical algorithm" as defined consistently in prior cases. If the PTO's argument is that operation of the overall claim is an algorithm, that is not a "mathematical algorithm."

If the PTO intends that an algorithm in the broad sense should be held nonstatutory, that position is contrary to *Benson*, *Freeman* and *Diehr*, which more narrowly define "mathematic algorithm." To hold otherwise, would render all digital electronic inventions per se nonstatutory. All such inventions operate according to algorithms in the broad sense -- otherwise they are inoperative.

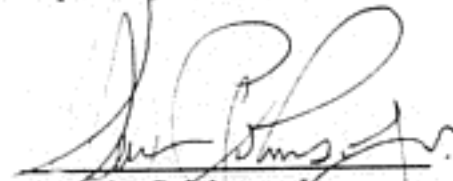
The Board's analysis -- what the means do is mathematical; how they do it is also mathematical -- applies to all digital electronics. The rejection of dependent claims 16 - 19, reciting specific digital apparatus (ROM, ALUs, barrel shifter), evidences the broad reach of the PTO's rationale.

Accordingly, the expanded Board's decision, and the rejection of claims 15 - 19, should be reversed.

**IN RE ALAPPAT - Reply Brief for Appellant**

**Appeal No. 92-1381**

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Alex Johnson", is written over a horizontal line.

Alexander C. Johnson, Jr.  
MARGER, JOHNSON  
McCOLLOM & STOLOWITZ, P.C.  
621 S.W. Morrison Street, Suite 650  
Portland, Oregon 97205  
(503) 222-3613

Attorneys for Alappat, Averill & Larsen

February 26, 1993

**CERTIFICATE OF SERVICE**

I hereby certify that on March 3<sup>rd</sup>, 1993, by and through our agent, Roberts Appellate Service, Temple Hills, MD, twenty-five (25) copies of each of the Reply Brief for Appellant and the Joint Appendix were hand delivered to the Clerk, U.S. Court of Appeals for the Federal Circuit, 717 Madison Avenue, Washington, D.C. 20439, and two copies of each were served by hand delivery upon Mr. Lee E. Barrett, Office of the Solicitor, U.S. Patent and Trademark Office, at Crystal Park Building 2, Room 918, 2121 Crystal Drive, Arlington, Virginia 22202.

I also hereby certify that on March 3<sup>rd</sup>, 1993 two copies each of the Reply Brief and Joint Appendix were served by our agent by first class mail, postage prepaid, addressed as follows:

Nancy J. Linck, Attorney at Law  
CUSHMAN, DARBY & CUSHMAN  
1615 L Street NW  
Washington, DC, 20036

Harold C. Wegner, Esq.  
WEGNER, CANTOR, et al  
1233 20th Street NE  
Washington, DC, 20036

H. Ross Workman, Esq.  
WORKMAN, NYDEGGER & JENSEN  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, UT 84111

**Attorneys for Amicus Curiae AIPLA**

Richard H. Stern, Esq.  
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, PC  
1755 Jefferson Davis Highway  
Arlington, VA 22202

**Attorneys for Amicus Curiae Seagate Technology, Inc.**

Allen M. Sokal, Esq.

Gerald H. Bjorge, Esq.

George E. Hutchinson, Esq.

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER

1300 I Street NW

Washington, DC, 20005-3315

**Attorneys for Amicus Curiae Federal Circuit Bar Assoc.**

R. Carl Moy, Esq.

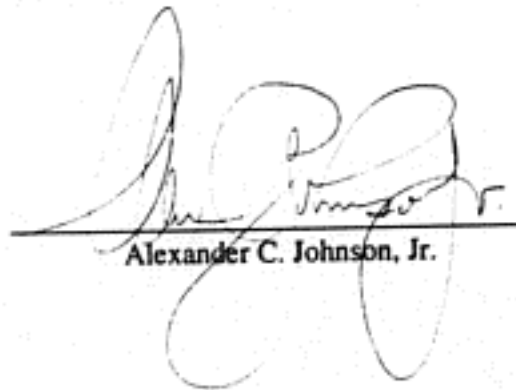
MERCHANT, GOULD, SMITH, EDELL, WELTER & SCHMIDT, P.A.

3100 Norwest Center

90 South Seventh Street

Minneapolis, MN 55402

**Attorney for Appellant In re Donaldson Company, Inc.**

A handwritten signature in black ink, appearing to read "Alexander C. Johnson, Jr.", is written over a horizontal line. The signature is stylized with large, flowing loops.