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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEORG TRUMMER
and WERNER BURGER

Appeal No. 1997-1351
Application 08/127,924[1]

ON BRIEF

Before THOMAS, BARRETT, and BARRY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

[1] Application for patent filed September 28, 1993, entitled (as amended in Paper No. 3) "Central Processing Unit For A Process Control System," which claims the foreign filing priority benefit under 35 U.S.C. § 119 of EPO Patent Application 92116560, filed September 28, 1992

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 19-45. The amendment (Paper No. 15) received January 17, 1996, has not been entered as noted in the Advisory Action (Paper No. 17).

We affirm.

BACKGROUND

The disclosed invention is directed to a central unit for a process control system having at least one control processor system with a control processor for the processing of real-time tasks as well as at least one additional remainder processor system which is separate from the control processor system and has a remainder processor for processing tasks which are not time-critical. By uncoupling the processor systems, accesses of the processor systems to the peripheral units do not affect each other and the alarm-reaction time is low and reproducible.

Claim 19 is reproduced below.

> 19. A process control system comprising a central unit and a plurality of peripheral devices which are connected to the central unit via a bus system, said central unit comprising:

at least one control processor system including a control processor processing time critical tasks such as real-time tasks; and

at least one additional remainder processor system which is separate from the control processor system and includes a remainder processor processing tasks which are not time critical;

wherein the bus system includes a control bus and a remainder bus, the control bus being connected to the control processor system, and the remainder bus being connected to the remainder processor system; and

wherein the plurality of peripheral devices are connected to both the control bus and the remainder bus.

The Examiner relies on the following prior art:

Matsumoto	4,065,809	December 27, 1977
Kagawa	4,495,569	January 22, 1985
De Kelaita et al. (De Kelaita)	4,713,758	December 15, 1987
Sackmann et al. (Sackmann)	5,131,092	July 14, 1992
Petty	5,222,213	June 22, 1993 (filed April 10, 1990)

Claims 19-45 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention.

Claims 19, 33, 36, 37, 42, and 45 stand rejected under 35 U.S.C. § 102(a) and (e) as being anticipated by Petty.

Claims 34 and 43 stand rejected under 35 U.S.C. § 103 as being unpatentable over Petty.

Claims 20-23, 38, and 39 stand rejected under 35 U.S.C. § 103 as being unpatentable over Petty and Kagawa.

Claims 24-26 and 40 stand rejected under 35 U.S.C. § 103 as being unpatentable over Petty and Matsumoto.

Claims 27-32 and 41 stand rejected under 35 U.S.C. § 103 as being unpatentable over Petty and Sackmann.

Claims 35 and 44 stand rejected under 35 U.S.C. § 103 as being unpatentable over Petty and De Kelaita.

We refer to the Final Rejection (Paper No. 7) (pages referred to as "FR__") and the Examiner's Answer (Paper No. 14) (pages referred to as "EA__") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 11) (pages referred to as "Br__") for a statement of Appellants' arguments thereagainst. In a Communication from the Examiner (Paper No. 18) entered April 1, 1996, the Examiner denied entry of the Reply Brief (Paper No. 16); therefore, the Reply Brief has not been considered.

OPINION

Indefiniteness

The second paragraph of 35 U.S.C. § 112 requires that a claim set out and circumscribe a particular area with a reasonable degree of precision and particularity when read in light of the disclosure as it would be by the person of ordinary skill in the art. See Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). "The first sentence of the second paragraph of § 112 is essentially a requirement for precision and definiteness of claim language. If the scope of subject matter embraced by a claim is clear, and if the applicant has not otherwise indicated that he intends that claim to be of a different scope, then the claim does particularly point out and distinctly claim the subject matter which the applicant regards as his invention. That is to say, if the 'enabling' disclosure of a specification is not commensurate in scope with the subject matter encompassed by a claim, that fact does not render the claim imprecise or indefinite or otherwise not in compliance with the second paragraph of

§ 112; rather, the claim is based on an insufficient disclosure (§ 112, first paragraph) and should be rejected on that ground." In re Borkowski, 422 F.2d 904, 909, 164 USPQ 642, 645-46 (CCPA 1970). There is some disagreement whether the evidence relied on by the examiner to demonstrate that the applicant has not claimed what he regards as his invention must be found outside the specification. See In re Mayhew, 527 F.2d 1229, 1239-40, 188 USPQ 356, 363-64 (CCPA 1976) (Baldwin, J., concurring).

Claim 19

The Examiner considers claim 19 to be incomplete because "[t]he apparatus which would enable the processors to cooperate with each other to perform a control function is not recited" (FR2), apparently referring to the fact that the interface module 6 having controllers 14 and 15 and blockable coupling element 16 is not recited as part of the claim. The Examiner considers the interface module necessary for the control processor and the remainder processor to interconnect with each other to perform a control function.

Appellants argue that "[a]lthough claim 19 does not specifically recite a controller which connects the control processor system and the remainder processor system with the bus system, the Applicants respectfully submit that this claim is nonetheless definite as required under 35 U.S.C. § 112, second paragraph" (Br5). No explanation is offered. Contrary to the Examiner's statement that Appellants admit that the claim is incomplete (EA6), Appellants only admit that the controller which connects the control processor system and the remainder processor system is not recited.

The Examiner provides case citations for the "incompleteness" rejection for the first time in the Examiner's Answer. First, the Examiner states (EA6): "[T]he claims must recite the unique combination of structural features and the manner in which these are related to each other which enables them to cooperate to produce the unitary result characteristic of the invention. see [sic] In re Thompson, 33 [sic] F2d 604, 607, 143 USPQ 21, 23 (CCPA 1964)." The only statement on the page referred to by the Examiner which is somewhat relevant is the following: "A particular feature upon which an

applicant predicates patentability must be recited in the claims; it is not sufficient merely to disclose it in the specification." In re Thompson, 336 F.2d 604, 607, 143 USPQ 21, 23 (CCPA 1964). This goes to the issue of defining over the prior art, not to indefiniteness for being incomplete. Thus, Thompson does not support the Examiner's rejection.

Second, the Examiner states (EA6-7): "A claim need [sic] to recite each and every element needed for the practical utilization of claimed subject matter[.] see [sic] Bendix Corp. v. United States, 600 F 2d 1364, 1369, 204 USPQ 617, 621 (Ct. Cl. 1979)." The Examiner misstates the case, which actually states that "it is not necessary that a claim recite each and every element needed for the practical utilization of the claimed subject matter" (emphasis added), Bendix Corp. v. United States, 600 F.2d 1364, 1369, 204 USPQ 617, 621 (Ct. Cl. 1979). Thus, Bendix does not support the Examiner's rejection.

Lastly, the Examiner states (EA7): "The omission of a structural element essential to the proper operation of a device renders the claim invalid. (True Temper Corp. v. CF

& I Steel Corp., 193 USPQ 763, 774 (D. Colo. 1976)." This is an accurate statement. While the statutory basis for invalidity is not stated, it is probably 35 U.S.C. § 112, second paragraph. See General Electric Company v. United States, 572 F.2d 745, 198 USPQ 65 (Ct. Cl. 1978) (Headnote 7: Patentee whose combination as claimed is inoperative for its claimed purpose has failed to distinctly claim disclosed invention as required by 35 U.S.C. 112, second paragraph; claim must recite structure capable of performing its purported function to be valid.).

"Incompleteness" is not a common rejection, but it is discussed as a ground of rejection in Manual of Patent Examining Procedure (MPEP) § 706.03(f) (5th ed. Rev. 14, Nov. 1992), now §§ 706.03(c) and 2172.01 (6th ed., Rev. 3, July 1997). As now stated in MPEP § 2172.01 (a new section):

> A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling. In re Mayhew, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976); MPEP 2164.08(c). Such essential matter may include missing elements, steps or necessary structural cooperative relationships of elements described by the applicant(s) as necessary to practice the invention.

> In addition, a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention. See In re Venezia, 530 F.2d 956, 189 USPQ 149 (CCPA 1976); In re Collier, 397 F.2d 1003, 158 USPQ 266 (CCPA 1968).

More recently, omission of an element disclosed to be essential has been treated under the 35 U.S.C. § 112, first paragraph, written description requirement. See Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998); Reiffin v. Microsoft Corp., 48 USPQ2d 1274 (N.D. Cal. 1998) (omitted element test).

We limit our analysis to the stated ground of rejection under 35 U.S.C. § 112, second paragraph. An "incompleteness" rejection should be extremely rare for reasons demonstrated by the Examiner's rejection. The rejection basically finds all the disclosed structure to be essential and would require all structure (controllers, blockable coupling element, control lines, etc.) to be included in an independent claim. This rejection could be applied in almost every case since it could be said that every part of a disclosed combination is somehow essential to the overall purpose of the invention. This would

infringe an applicant's right to claim what he regards as his invention. Nevertheless, we have the rejection before us and must decide it. It is the Examiner's burden to establish that the claim is inoperative and fails to particularly point out and distinctly claim the invention. Despite the lack of argument on the merits by Appellants, we are not persuaded that claim 19 fails to particular point out and distinctly claim what Appellants regard as their invention.

The Examiner does not point to any evidence that Appellants regard their invention to be something other than what is claimed. The fact that the originally filed independent claim 1 did not include a controller or an interface module indicates the original intent to claim the system without either element. Moreover, claim 19 does not recite any cooperation between processors that would make some structure necessary.

As to the Examiner's contention that the interface module having a blockable coupling element is essential, the fact that such an interface module is disclosed does not necessarily render it essential or imply that the claimed

invention is inoperative without the interface module. It is true that the processors cannot share data or perform other cooperative functions, but both processors could work independently. This does not make the claim indefinite or incomplete.

Similarly, the fact that the control processor system and the remainder processor system are not interconnected to perform a control function does not render the claim indefinite. Both processors could work independently. All the other elements of claim 19 are interconnected in a definite arrangement as shown in Appellants' figure 1 except that at least two peripheral units are also connected to the control bus 7'. Claim 19 is not just an aggregation or unconnected list of parts as the Examiner contends.

In summary, we conclude that claim 19 satisfies the requirements of 35 U.S.C. § 112, second paragraph. The rejection of claim 19 is reversed.

Claims 21, 23, 26, and 28

The Examiner considers the limitations in these claims vague because "[t]he interface module does not perform a function other than containing the controller/memory" (FR3)

and because "[i]t is unclear whether this is a separate unit and what other elements it contains beside the controller" (FR3).

Appellants argue that it is not necessary to state the function of the interface module or what other elements the interface module contains (Br5-6).

The interface module is a broad limitation because it recites no function or other elements, but this does not make it vague or indefinite. Claim breadth should not be confused with indefiniteness. See In re Miller, 441 F.2d 689, 693, 169 USPQ 597, 600 (CCPA 1971). Because no function or other elements are recited for the interface module, a controller alone could be an interface module. The rejection of claims 21, 23, 26, and 28 is reversed.

Claims 24 and 40

The Examiner states that these "claims do not recite the apparatus which will enable the operation of processors using the coupling elements, for example the control lines" (FR3).

Appellants argue that this recitation of these claims is definite without specifically including control lines (Br6).

The Examiner does not respond to this argument. However, we would not find any argument persuasive. The claims are definite without reciting control lines. The claims are broad. This form of claiming by adding a limitation at a time in the dependent claims is so common that we fail to see how it can be questioned. The rejection of claims 24 and 40 is reversed.

Claim 25

The Examiner considers this claim indefinite because it does not provide the particulars of how the tristate-HCMOS drivers are integrated with the rest of the system at the circuit level (FR3).

Appellants argue that claim 25 is definite without including these particulars (Br6).

The Examiner does not respond to this argument. However, again, we would not find any argument persuasive. It is not necessary to recite detailed connections. The rejection of claim 25 is reversed.

Claims 29-32

The Examiner considers these claims vague when read with previous claims because the interface module only contains a controller/memory (FR3).

Appellants traverse the statement that the interface module contains only a controller because the interface module may include other elements (Br7).

In response, the Examiner states that the issue is not claim scope (EA9): "What the claim is really saying is that 'the controller which is an interface module is a circuit'. This is confusing because they all appear to be different words for the same physical entity. It is clear that a controller interfaces various devices and it is a circuit with a specific function of controlling the entity it is supposed to control."

We disagree with the Examiner. That the interface module is broadly recited does not make the limitation that the interface module is an application-specific circuit indefinite. It is also not correct to state that the controller, interface module, and application-specific circuit are all just different names for the same thing and,

therefore, confusing. The interface module can (and usually will) contain more than the controller and so an interface module is not necessarily the same thing as a controller. Further, while the interface module is a circuit, it is not necessarily an application-specific integrated circuit (ASIC), which is a chip that is custom designed for a specific application rather than a general-purpose chip such as a microprocessor (although we note that claims 29-32 do not recite an application-specific integrated circuit as disclosed in the specification, page 4). These claims qualify the structure of the interface module and are not confusing. The rejection of claims 29-32 is reversed.

Claims 33 and 42

The Examiner considers it "unclear what the control lines control or how they are relevant to the apparatus in claim 19" (FR4).

Appellants state that no further recitations are required for these claims to be definite (Br7).

The control lines are shown in figure 1 as element 18 and connect the control processor 8 and the remainder processor 10, as claimed. The claims do not need to recite

the function. The function of the control lines is described in the specification (e.g., pages 6-7). The Examiner's contention that "applicant did not disclose control and remainder processors communicating using only control lines" (EA9) is not understood, since we nowhere find it implied that communication is done only with the control lines. The rejection of claims 33 and 42 is reversed.

Claims 35 and 44

The Examiner states that "[t]here is no support neither [sic] in the claims nor the specification that the remainder processor can monitor all units which are present in the central unit" (FR4).

Appellants argue that there is clear support for the recitation that the remainder processor system is a master system for monitoring the central unit in original claim 17 (Br7).

The Examiner responds that "the word 'master' implies some kind of control over the central unit" (EA10) and there is no support for this feature.

Original claim 17 presents express support for the limitation of claims 35 and 44. We also refer to the specification, page 7, lines 14-21, which are not addressed by the Examiner. We conclude that claims 35 and 44 are not misdescriptive. The rejection of claims 35 and 44 is reversed.

Claim 37

The Examiner considers claims 19 and 37 inconsistent because the bodies of claims 19 and 37 are the same, while the preamble of claim 37 is directed to a "central processing unit for a process control system" and the preamble of claim 19 recites a "process control system" (FR4): "It would appear that the apparatus in the body of the claims cannot be both a central processing unit and a process control system."

Appellants argue that "the claimed features could be included in either a central processing unit or processed control system as claimed in the separate independent claims" (Br8).

We agree with Appellants. The Examiner does not comment on the fact that the bodies in both claims 19 and 37

are directed to the "central unit." A "process control system" as recited in claim 19 is inclusive of a "central processing unit for a process control system" in claim 37. We see nothing inconsistent or indefinite about claims 19 or 37.

The Examiner also rejects claim 37 for the same reasons stated with respect to the rejection of claim 19 because the bodies of the claims are the same. For the reasons stated in the analysis of claim 19, we conclude that the Examiner erred.

For the reasons stated above, the rejection of claim 37 is reversed.

Patentability

The claims are grouped to stand or fall together with independent claims 19 and 37, which stand rejected under 35 U.S.C. § 102(a) and (e) as being anticipated by Petty.

"Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention."

RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Appellants argue (Br9-10) that the Examiner erred in finding that processor 15 would process real-time tasks as recited in independent claims 19 and 37, because Petty does not disclose or suggest what sort of tasks processor 15 performs. The Examiner states (EA12-13) that Petty discloses that processor 15 is the intelligence behind ISDN terminal 10 (col. 3, lines 15-16), which is connected to ISDN interface 11 to telephone line 26, and, thus, it performs real-time telephone tasks. The Examiner finds (EA13) that communication of display information to a display is not time critical. Appellants argue that the control of an ISDN interface is not a real-time process (RBr6): "It is not critical that there is a continual and definite reaction to incoming data using an ISDN interface. In a worst case scenario, if data is lost using an ISDN interface, this data is then re-transmitted."

We are not persuaded of error in the Examiner's findings that telephone tasks performed by the M68000 microprocessor 15 are "time critical" or "real-time" tasks

and display tasks performed by RISC-based communications processor 202 are "not time critical." The terms "time critical" and "not time critical" are very broad. The fact that Petty does not use these terms does not negate anticipation of these limitations. Telephone conversations over an ISDN interface are certainly time critical because they happen in real time. The fact that data may be re-transmitted if data is lost does not imply that data should not be handled in a time critical manner.

Appellants also argue (Br10) that the Examiner erred in finding that peripheral units 20-22 of Petty are connected to both buses 208 and 23 because figure 2 of Petty shows the peripheral units connected to RISC-based processor bus 208 and through the RISC-based communications processor 202 and DMA 207 to the M68000 bus 23. The Examiner disagrees (EA14): "As one can see in figure 2 which shows example item 22, bus 23 is connected in more than one ways [sic] to display 22. One connection is through SMC Channel through the multiplexer and line 215. Another connection is through SCP Channel through the multiplexer and the NOR gate. Therefore, M68000 bus 23 is connected to display 22."

The Examiner's reasoning is not understood. The display 22 is not connected via the SMC channel or the SCP channel to the RISC-based processor bus 208. "Channel 200 and time-share portions of elements 201-208 together make up DMA serial controller 3 [of figure 1]." (Col. 3, lines 46-48.) Display 22 only communicates via time-shared SCC channel 200.

Nevertheless, the term "connected to" in the phrase "the plurality of peripheral devices are connected to both the control bus and the remainder bus" is very broad and does not require a "separate" or "independent" connection between a peripheral device and each of the two buses, nor does it require a "direct" connection to the bus. The term "connected to" does not preclude the presence of intervening elements; e.g., display 22 is "connected to" RISC-based processor bus 208 even though it is connected via the intervening elements of interface 18, multiplexing interface 201, and channel 200. Therefore, the limitation of "the plurality of peripheral devices are connected to both the control bus and the remainder bus" is broad enough to include the arrangement in Petty where the display is

connected to the RISC-based processor bus 208 which is in turn connected to M68000 bus 23.

For the reasons stated above, we sustain the rejection of claims 19 and 37. As argued, the rest of the claims fall with claims 19 and 37. Accordingly, we also sustain the rejections of claims 20-36 and 38-45.

To save future argument between the Examiner and Appellants, we note that if the limitation that "the plurality of peripheral devices are connected to both the control bus and the remainder bus" was amended to read "the plurality of peripheral devices are connected <u>independently</u> to <u>each of</u> [both] the control bus and the remainder bus" (additions underlined and deletion in brackets), it would distinguish over the arrangement in Petty.

CONCLUSION

The rejections of claims 19-45 under 35 U.S.C. §§ 102 and 103 are sustained.

The rejections of claims 19-45 under 35 U.S.C. § 112, second paragraph, are reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

JAMES D. THOMAS Administrative Patent Judge	)	
LEE E. BARRETT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)	

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