Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASAAKI ITOH, MARI UCHIDA,
MITSUO KUDOH and TADAO OTANI

Appeal No. 1999-0404
Application No. 08/580,256

HEARD: April 5, 2000

Before McCANDLISH, Senior Administrative Patent Judge, NASE and GONZALES, Administrative Patent Judges.

NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection (Paper No. 9, mailed May 28, 1997) of claims 1 to 16, which are all of the claims pending in this application.[1]

[1] Claims 7, 9, 11, 15 and 16 were amended subsequent to the final rejection.

We AFFIRM-IN-PART and REMAND.

BACKGROUND

The appellants' invention relates to a heat exchanger used for refrigerators and air conditioners using a refrigerant mixture as an operating fluid (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Chiang et al. (Chiang)	5,458,191	Oct. 17, 1995 (filed July 11, 1994)
Kenkyujo	1,001,630 (Great Britain)	Aug. 18, 1965

In addition, the examiner also relied upon known prior art (Jepson format of claim 9).

Claims 1 to 6 stand rejected under 35 U.S.C. § 102(a)[2] as being anticipated by Chiang.

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[2] It would appear to us that this rejection is more appropriately based upon 35 U.S.C. § 102(e).

Claims 7 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chiang in view of Kenkyujo.

Claims 9-14 and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chiang in view of known prior art (Jepson format of claim 9).

Claim 15 stands rejected under 35 U.S.C. § 103 as being unpatentable over Chiang in view of known prior art (Jepson format of claim 9) as applied to claims 9 to 14 and 16 above, and further in view of Kenkyujo.[3]

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 17, mailed June 9, 1998) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 15,

[3] Since claim 16 depends from claim 15 it would appear to us that claim 16 should have been included in this ground of rejection rather than the preceding ground of rejection.

filed March 30, 1998) and reply brief (Paper No. 19, filed August 10, 1998) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or the recognition of inherent properties that may be possessed by the prior art reference. See Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). A prior art reference anticipates the subject of a claim when the reference discloses every feature of the claimed invention, either explicitly or inherently (see Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed. Cir. 1997) and

RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984)); however, the law of anticipation does not require that the reference teach what the appellants are claiming, but only that the claims on appeal "read on" something disclosed in the reference (see Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984)).

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Claim 1

We sustain the rejection of claim 1 under 35 U.S.C. § 102.

Claim 1 reads as follows:

> A heat transfer pipe used for a condenser and an evaporator in a refrigerating cycle using a refrigerant mixture, comprising main grooves and auxiliary grooves each formed on the inner surface of said heat transfer pipe with said main grooves intersecting said auxiliary grooves, wherein said main grooves are separated by ridges, and said ridges are divided into ribs by said auxiliary grooves, and wherein a length of said ribs formed along the direction of said main grooves is made longer than a width of said ridges, a width of said auxiliary grooves is made smaller than the length of said ribs and further said auxiliary grooves are formed in a direction where a pressure gradient in said heat transfer pipe is reduced.

Chiang's invention relates generally to tubes used in heat exchangers for transferring heat between a fluid inside the tube and a fluid outside the tube. More particularly, his invention relates to a heat transfer tube having an internal surface that is capable of enhancing the heat transfer performance of the tube. Heat exchangers of air conditioning and refrigeration (AC&R) or similar systems contain such tubes. Chiang teaches (column 1, lines 51-65) that

> [i]n order to simplify acquisition and stocking as well as to reduce costs of manufacturing, it is desirable that the same type of tubing be used to in all the heat exchangers of a system. But heat transfer tubing that is

> optimized for use in one application frequently does not perform as well when used in the other application. To obtain maximum performance in a given system under these circumstances, it would be necessary to use two types of tubing, one for each functional application. But there is at least one type of AC&R system where a given heat exchanger must perform both functions, i.e. a reversible vapor compression or heat pump type air conditioning system. It is not possible to optimize a given heat exchanger for a single function in such a system and the heat transfer tube selected must be able to perform both functions well.

Chiang discloses that the configuration of the enhancement gives improved heat transfer performance both in a condensing and an evaporating application.

Figure 1 of Chiang shows, in an overall isometric view, a heat transfer tube 50 including a tube wall 51 having an internal surface enhancement 52. Figure 2 depicts heat transfer tube 50 in a cross sectioned elevation view wherein only a single rib 53 and a single notch 54 of surface enhancement 52 is shown for clarity, but in the tube of Chiang's invention, a plurality of ribs 53 (all parallel to each other) extend out from wall 51 of tube 50. Rib 53 is inclined at helix angle " from tube longitudinal axis a_T.

Notch axis a_N is inclined at angle 2 from ribs 53. Tube 10 has an internal diameter D_2 as measured from the internal surface of the tube between ribs.

Figure 3 of Chiang is an isometric view of a portion of wall 51 of heat transfer tube 50 depicting details of surface enhancement 52. Extending outward from wall 51 are a plurality of helical ribs 53. At intervals along the ribs are a series of notches 54. The notches 54 are formed in ribs 53 by a rolling process. The material displaced as the notches are formed is left as a projection 55 that projects outward from each side of a given rib 53 around each notch 54 in that rib. The projections have a salutary effect on the heat transfer performance of the tube, as they both increase the surface area of the tube exposed to the fluid flowing through the tube and also promote turbulence in the fluid flow near the tube inner surface. Figure 4 is a plan view of a portion of wall 51 of tube 50 showing ribs 53 disposed on the wall at rib spacing S_r. Notches 54 are impressed into the ribs at notch interval S_n. The angle of incidence between the notches and the ribs is angle 2. Figure 5 is a section view of wall

51 showing that ribs 53 have height H_r and have rib spacing S_r. Figure 6 is a section view of wall 51 showing that notches 54 have an angle between opposite notch faces 56 of (and are impressed into ribs 54 to a depth of D_n.

Chiang teaches (column 3, line 52, to column 4, line 24) that for optimum heat transfer consistent with minimum fluid flow resistance, a tube embodying the present invention and having a nominal outside diameter of 20 mm (3/4 inch) or less should have an internal enhancement with features as described above and having the following parameters:

a. the rib helix angle should be between five and 45 degrees, or

5°#"#45°;

b. the ratio of the rib height to the inner diameter of the tube should be between 0.015 and 0.03, or

$0.015 \# H_r/D_2 \# 0.03$;

c. the number of ribs per unit length of tube inner diameter should be between 10 and 24 per centimeter (26 and 60 per inch);

d. the angle of incidence between the notch axis and the [helical ribs] longitudinal axis of the tube should be less than 15 degrees, or

2<15°

and preferably less than eight degrees;

e. the ratio between the interval between notches in a rib and the tube inner diameter should be between 0.025 and 0.1, or

$0.025 \# S_n/D_i$[sic, D_2]$\#0.1$;

f. the angle between the opposite faces of a notch should be less than 90 degrees, or

(<90°; and

g. the notch depth should be at least 40 percent of the rib height, or

$D_n/H_r \# 0.4$.

The examiner regarded (answer, p. 4) the recitation "for a condenser and an evaporator in a refrigerating cycle using a refrigerant mixture" to be a statement of intended use and was not given any patentable weight. As to the limitation that "said auxiliary grooves are formed in a direction where a pressure gradient in said heat transfer pipe is reduced," the examiner stated (answer, p. 6) that the notches of Chiang inherently are formed in a direction where a pressure gradient in the heat transfer tube is reduced. The remaining limitations of claim 1 were considered by the examiner to be clearly met by Chiang.

The appellants argue (brief, p. 6; reply brief, pp. 1-2) that nowhere in Chiang is it disclosed that the notches should be formed in a direction where a pressure gradient in the heat transfer tube is reduced. The appellants also argue (brief, p. 8-10; reply brief, pp. 4-5) that the preamble of claim 1 (i.e.,
for a condenser and an evaporator in a refrigerating cycle using a refrigerant mixture) gives life, meaning and vitality to the claim and must be given patentable weight.

The arguments advanced by the appellants in their brief and reply brief do not convince us that the subject matter of claim 1 is novel for the following reasons.

First, the manner or method in which a machine (e.g., a heat transfer pipe) is to be utilized is not germane to the issue of patentability of the machine (e.g., the heat transfer pipe) itself. In re Casey, 370 F.2d 576, 580, 152 USPQ 235, 238 (CCPA 1967). A statement of intended use does not qualify or distinguish the structural apparatus claimed over the reference. In re Sinex, 309 F.2d 488, 492, 135 USPQ 302, 305

(CCPA 1962). There is an extensive body of precedent on the question of whether a statement in a claim of purpose or intended use constitutes a limitation for purposes of patentability. See generally Kropa v. Robie, 187 F.2d 150, 155-59, 88 USPQ 478, 483-87 (CCPA 1951) and the authority cited therein, and cases compiled in 2 Chisum, Patents § 8.06[1][d] (1991). Such statements often, although not necessarily, appear in the claim's preamble. In re Stencel, 828 F.2d 751, 754, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987). The question of whether a preamble or introductory clause constitutes a limitation to the claim is a matter to be determined by the facts of each case in view of the claimed invention as a whole. Id. Since in independent claim 1 the limitations following the recitation "[a] heat transfer pipe used for a condenser and an evaporator in a refrigerating cycle using a refrigerant mixture" set forth a description of structure which is self-contained and does not depend upon the introductory clause for completeness, we are of the opinion that the recitation "used for a condenser and an evaporator in a

refrigerating cycle using a refrigerant mixture" does not constitute a limitation of the claim. Moreover, it is readily apparent that the heat transfer tube of Chiang has the **inherent capability** of being used for a condenser and an evaporator in a refrigerating cycle using a refrigerant mixture. In this regard, it should be noted that while it is well settled that a claimed functional limitation directed to a new intended use of an old apparatus does not in and of itself make a claim drawn to an apparatus patentable over the old apparatus, it is nevertheless necessary that the old apparatus (e.g., the heat transfer tube of Chiang) be inherently capable of performing the recited intended use in order to satisfy the functional limitation in question. See In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

Second, we agree with the examiner that the notches of Chiang are inherently formed in a direction where a pressure gradient in the heat transfer tube is reduced. As set forth above, the prior art reference need not expressly disclose

each claimed element in order to anticipate the claimed invention. Rather, if a claimed element is inherent in a prior art reference, then that element is disclosed for purposes of finding anticipation. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d at 631-33, 2 USPQ2d at 1052-54.

It is well settled that the burden of establishing a prima facie case of anticipation resides with the Patent and Trademark Office (PTO). See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). When relying upon the theory of inherency, the Patent and Trademark Office (PTO) must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. See Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Patent App. & Int. 1990).

In this case, the allegedly inherent characteristic does necessarily flow from the teachings of Chiang for the following reasons. Chiang's disclosed angles for the rib helix angle and the angle of incidence between the notches and

the ribs are very similar to the appellants' disclosed angles for the main grooves and the auxiliary grooves. This similarity of structure would have led an artisan to conclude that if the auxiliary grooves in the appellants' heat transfer pipe are formed in a direction where a pressure gradient in said heat transfer pipe is reduced then the notches in Chiang's heat transfer tube are formed in a direction where a pressure gradient in the heat transfer tube is reduced. Additionally, since the direction of flow is not set forth in the claim, it is readily apparent that in Chiang's heat transfer tube in one direction of flow the pressure gradient in the heat transfer tube would be reduced and in the other direction of flow the pressure gradient in the heat transfer tube would be increased. Thus, the limitation in claim 1 that "said auxiliary grooves are formed in a direction where a pressure gradient in said heat transfer pipe is reduced" is inherently met by Chiang.

After the PTO establishes a prima facie case of anticipation based on inherency, the burden shifts to the appellants to prove

that the subject matter shown to be in the prior art does not possess the characteristics of the claimed invention. See In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985); In re King, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed. Cir. 1986). The appellants have not come forward with any evidence to satisfy that burden. Compare In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); In re Ludtke, 441 F.2d 660, 664, 169 USPQ 563, 566-67 (CCPA 1971).

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 102 is affirmed.

Claims 2 to 6

We will not sustain the rejection of claims 2 to 6 under 35 U.S.C. § 102.

Dependent claim 2 adds to parent claim 1 the further limitation that "said main grooves are formed by being inclined at an angle in a range from 7° to 25° with respect to a pipe axis." Dependent claims 3 to 6 add to parent claim 1 the further limitation that "said auxiliary grooves are formed

at a spiral angle in a range of ±5° with respect to a pipe axis."

The appellants argue (brief, pp. 6-8) that the above noted limitations are not met by Chiang. We agree. It is an elementary principle of patent law that when something is claimed as having a maximum value ranging to a minimum value, the claim is "anticipated" if the prior art shows any one value within the claimed range. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985).

When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. See

Ex parte Lee, 31 USPQ2d 1105, 1106-07 (Bd. Pat. App. & Int. 1993).

In this case, Chiang does not disclose any one value falling within the range set forth in either claim 2 or claim 3. Moreover, it is our view that a value falling within the range set forth in claim 2 or claim 3 is not set forth in Chiang with "sufficient specificity" to constitute an anticipation.

For the reasons set forth above, the decision of the examiner to reject claims 2 to 6 under 35 U.S.C. § 102 is reversed.

Claims 7 and 8

We will not sustain the rejection of claims 7 and 8 under 35 U.S.C. § 103.

Dependent claims 7 and 8 add to parent claim 1 the further limitation that "convex deformed portions are formed in each of said ribs to cause a refrigerant flow along said

main grooves to bend in the direction of said auxiliary grooves."

Kenkyujo discloses a finned heat exchange tube. As shown in Figures 1 to 4, the heat exchange tube 1 is provided on its outer circumference with a number of longitudinal fins 2. The fins 2 are provided with numerous diagonally cut grooves which run spirally over the tube in direction of arrow A in Figure 1. Due to the cutting of grooves 3 in the fins 2, burrs 2a, 2b are formed on each unit fin as shown in Figure 4.

After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

Based on our analysis and review of Chiang and claim 7, it is our opinion that the only difference is the limitation that "convex deformed portions are formed in each of said ribs to cause a refrigerant flow along said main grooves to bend in the direction of said auxiliary grooves."

With regard to this difference, the examiner determined (answer, p. 5) that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Chiang convex deformed portions formed on the heat transfer ribs as disclosed in Kenkyujo. We do not agree.

We agree with the appellants' argument (brief, pp. 11) that the applied prior art does not suggest the claimed subject matter. In our view, the only suggestion for modifying Chiang in the manner proposed by the examiner to meet the above-noted limitation stems from hindsight knowledge derived from the appellants' own disclosure. The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). It follows that we cannot sustain the examiner's rejections of claims 7 and 8.

Claim 9

Claim 9 reads as follows:

> In a refrigerating apparatus comprising a refrigerating cycle using a refrigerant mixture flowing through a condenser and an evaporator, the improvement comprising at least one of said condenser and evaporator including a heat transfer pipe having an inner surface comprising main grooves and auxiliary grooves intersecting with said main grooves, wherein said main grooves are separated by ridges, and said ridges are divided into ribs by said auxiliary grooves, and wherein a length of said ribs formed along the direction of said main grooves is made longer than a width of said ridges, a width of said auxiliary grooves is made smaller than the length of said ribs and further said auxiliary grooves are formed in a direction where a pressure gradient in said heat transfer pipe is reduced.

In addition to the teachings of Chiang set forth above with respect to claim 1, the examiner relies of the Jepson format of claim 9 as admitting that a refrigerating apparatus comprising a refrigerating cycle using a refrigerant mixture flowing through a condenser and an evaporator is known prior art.

Based on our analysis and review of Chiang and claim 9, it is our opinion that the only difference between Chiang and claim 9 is the limitation that the heat transfer pipe is used

in at least one of a condenser and an evaporator of a refrigerating apparatus comprising a refrigerating cycle using a refrigerant mixture flowing through the condenser and the evaporator.

With regard to this difference, the examiner determined (answer, p. 6) that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the heat transfer tube of Chiang in a refrigerating apparatus comprising a refrigerating cycle using a refrigerant mixture flowing through a condenser and an evaporator as disclosed in the known prior art. We agree.

The arguments advanced by the appellants in their brief and reply brief are unpersuasive for the reasons set forth above with respect to claim 1 and the following reasons.

First, the combined teachings of the applied prior art would have suggested the claimed invention to one of ordinary skill in the art for the reason set forth above. We note that

while there must be some teaching, reason, suggestion, or motivation to
combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art specifically suggest making the combination (see B.F. Goodrich Co. v. Aircraft Braking Systems Corp., 72 F.3d 1577, 1583, 37 USPQ2d 1314, 1319 (Fed. Cir. 1996) and In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)) as the appellants would apparently have us believe. Rather, as set forth above the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). In this instance, it is our opinion that Chiang's teaching that his heat transfer tube gives improved heat transfer performance both in a condensing and an evaporating application would have been sufficient motivation to one of ordinary skill in this art at the time of the

invention to have included such heat exchange tubes in the known prior art system. Thus, we conclude that the examiner's determination regarding the obviousness of the claimed subject matter did not involve the use of hindsight knowledge derived from the appellants' own disclosure.[4]

Second, while the applied prior art does not recognize the particular problem the appellants set out to solve, this fact does not persuade us that any error in the examiner's determination regarding the obviousness of the claimed subject matter has occurred. As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor. See In re Dillon, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(en banc), cert. denied, 500 U.S. 904 (1991) and In re

[4] The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Beattie, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992).

Third, the appellants have argued the deficiencies of each reference on an individual basis. However, it is well settled that nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. See In re Merck & Co. Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986).

Fourth, the appellants argue that the invention achieves remarkable improvements in terms of overall heat transfer coefficient (i.e., unexpected results). However, it is well settled that an attorney's argument in a brief, reply brief, or supplemental reply brief cannot take the place of **evidence**. See In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). We note that no such **evidence** is of record in this application. Moreover, it would appear that in applying the teachings of Chiang to the known prior art system an

improvement in terms of overall heat transfer coefficient would be expected.[5]

For the reasons set forth above, the decision of the examiner to reject claim 9 under 35 U.S.C. § 103 is affirmed.

Claims 10 to 16

With regard to claims 10 to 14 and 16, as set forth above with respect to claims 2 to 6, Chiang does not met the limitations of these claims. Since the examiner has not specifically found that the subject matter of these claims was obvious under 35 U.S.C. § 103, we will not sustain the rejection of claims 10 to 14 and 16 under 35 U.S.C. § 103.

With regard to claim 15, we will not sustain the rejection of this claim under 35 U.S.C. § 103 for the reasons set forth above with respect to claim 7.

REMAND

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[5] Expected beneficial results are evidence of obviousness just as unexpected beneficial results are evidence of unobviousness. See In re Skoner, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975).

We remand the application to the examiner for further consideration of the patentability of claims 2 to 6 and 10 to 14 under 35 U.S.C. § 103. Specifically, the examiner should determine whether any value within the claimed ranges would have been obvious at the time the invention was made to a person having ordinary skill in the art from the teachings of Chiang.[6]

CONCLUSION

To summarize, the decision of the examiner to reject claim 1 under 35 U.S.C. § 102 is affirmed; the decision of the examiner to reject claims 2 to 6 under 35 U.S.C. § 102 is reversed; the decision of the examiner to reject claim 9 under 35 U.S.C. § 103 is affirmed; and the decision of the examiner to reject claims 7, 8 and 10 to 16 under 35 U.S.C. § 103 is reversed. In addition, this application has been remanded to the examiner for further consideration.

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[6] In making this determination the examiner should review Manual of Patent Examining Procedure (MPEP) § 2144.05.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a remand. 37 CFR § 1.196(e) provides that

> [w]henever a decision of the Board of Patent Appeals and Interferences includes or allows a remand, that decision shall not be considered a final decision. When appropriate, upon conclusion of proceedings on remand before the examiner, the Board of Patent Appeals and Interferences may enter an order otherwise making its decision final.

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

> (b) Appellant may file a single request for rehearing within two months from the date of the original decision . . . .

The effective date of the affirmance is deferred until conclusion of the proceedings before the examiner unless, as a mere incident to the limited proceedings, the affirmed rejection is overcome. If the proceedings before the examiner does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the

affirmed rejections, including any timely request for rehearing thereof.

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

AFFIRMED-IN-PART; REMANDED

HARRISON E. McCANDLISH SENIOR Administrative Patent Judge	)
JEFFREY V. NASE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN F. GONZALES Administrative Patent Judge	)

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