UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAKONNEN BELEW, BO-LENNART JOHANSSON
and, JEAN-LUC MALOISEL

Appeal No. 2006-0931
Application 10/312,054
Technology Center 1700

Decided: September 29, 2006

Before PAK, WALTZ, and TIMM, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the Examiner's final rejection of claims 1 through 14, 16 through 20, 22, and 30 through 33. Claims 15, 24, 25, 28, and 29, the other remaining claims in the above-identified application, stand allowed by the Examiner. We have jurisdiction pursuant to 35 U.S.C. § 134.

APPEALED SUBJECT MATTER

Claims 1 and 22 are representative of the subject matter on appeal and read as follows:

1. In a method for removing a positively charged substance from an aqueous liquid (I) containing said substance by contacting the liquid with a cation-exchanger (1) under conditions permitting binding of said substance to said cation-exchanger (1), optionally followed by a subsequent desorption of said substance, the improvement comprising selecting said cation-exchanger to be capable of

(a) binding said substance by cation-exchange in an aqueous liquid reference (II) at an ionic strength corresponding to 0.3 M NaC1 and

(b) permitting a break through [sic, breakthrough] capacity for said substance ≥ 200% of the breakthrough capacity of said substance for a reference cation-exchanger (2) containing sulphopropyl groups $–CH_2CH_2CH_2SO_2O^–$.

22. A cation-exchanger (1) comprising a plurality of cation-exchange ligands attached to a support matrix said ligands containing a cation-exchange group selected among sulphonate ($-SO_3^–$/$-SO_3H$), sulphate ($-OSO_3^–$/$-OSO_3H$), carboxylate ($-COO^–$/-COOH), phosphate ($-OPO_3^{2–}$/$-OPO_3H^–$/$-OPO_3H_2$)and phosphonate ($-PO_3^{2–}$/$-PO_3^–H$/$-PO_3H_2$), said cation-exchanger (1) having a breakthrough capacity for at least one of the reference proteins selected from the group consisting of human serum albumin, lysozym and IgG, which is ≥ 200% of the corresponding breakthrough capacity obtained for a sulphopropyl cation-exchanger (cation-exchanger 2) with essentially the same support matrix, degree of substitution, counterion etc as cation-exchanger (1) and under essentially the same running conditions as for determining the breakthrough capacity for cation-exchanger (1);

wherein cation-exchangers in which each of the cation-exchange groups are bound to a support matrix via a non-substituted straight chain of carbon atoms interrupted at only one position by a thioether sulphur are excluded.

PRIOR ART REFERENCES

The prior art references relied upon by the examiner in support of the rejections before us are:

Carbonell	US 5,045,190	Sep. 3, 1991
Bergrund	WO 99/65607	Dec. 23, 1999

REJECTIONS

The appealed claims stand rejected as follows:

1) Claims 1 through 8, 12, 13, 16 through 20, and 22 under 35 U.S.C. § 102(b) as anticipated by the disclosure of Carbonell; and

2) Claims 1 through 12, 14, 16 through 20, and 30 through 33 under 35 U.S.C. § 102(a) as anticipated by the disclosure of Bergrund.

OPINION

We have carefully reviewed the claims, specification, and prior art, including all of the arguments advanced by both the Examiner and the Appellants in support of their respective positions. This review has led us to conclude that the Examiner's § 102 rejections are well-founded. Accordingly, we affirm the Examiner's decision rejecting the claims on appeal under § 102 for essentially the factual findings and conclusions set forth in the Answer. We add the following primarily for emphasis and completeness.[1]

[1] The Appellants' arguments are directed to only claims 1 and 22. Therefore, for purposes of this appeal, we limit our discussion to these claims consistent with 37 C.F.R. § 41.37(c)(1)(vii)(2004).

There is no dispute that Carbonell and Bergrund individually describe the method recited in claim 1, except for the claimed functionally defined properties for a cation-exchanger as shown below:

> [C]apable of
>
> (a) binding said substance by cation-exchange in an aqueous liquid reference (II) at an ionic strength corresponding to 0.3 M NaCl[;] and
>
> (b) permitting a break through [sic., breakthrough] capacity for said substance $\geq$ 200% of the breakthrough capacity of said substance for a reference cation-exchanger (2) containing sulphopropyl groups – $CH_2CH_2CH_2SO_2O^-$.

Nor is there any dispute that Carbonell describes a cation-exchanger corresponding to the cation-exchanger recited in claim 22, except for the claimed functionally defined properties as show below:

> [H]aving a breakthrough capacity for at least one of the reference protein selected from the group consisting of human serum albumin, lysozym and IgG, which is $\geq$ 200% of the corresponding breakthrough capacity obtained for a sulphopropyl cation-exchanger (cation-exhanger 2) with essentially the same support matrix, degree of substitution, counterion **etc** as cation-exchanger (1) and under essentially the same running conditions as for determining the breakthrough capapcity for cation-exchanger (1)… [Emphasis added.]

Thus, the dispositive question is whether the functional limitations recited in claims 1 and 22 would have rendered the claimed cation-exchanger patentably different from those described in the prior art references. On this record, we answer this question in the negative.

As our reviewing court stated in *In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997):

> A patent applicant is free to recite features of an apparatus either structurally or functionally. *See In re Swinehart,* 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971) ("[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims."). Yet, choosing to define an element functionally, i.e., by what it does, carries with it a risk. As our predecessor court stated in Swinehart, 439 F.2d at 213, 169 USPQ at 228:
>
> > where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Here, the Examiner has reason to believe that the cation- exchangers described in Carbonell and Berglund are capable of performing the claimed functions. (See the Answer at 3-8.) The Examiner has found, and the Appellants have not disputed, that the cation-exchangers described in Carbonell and Berglund have the same chemical structure and utility (used in the claimed method) as the cation-exchanger recited in, for example, the Appellants' dependent claim 5. (Compare the Answer at 3-8 with Br. at 3-11.) As also undisputed by the Appellants, Carbonell teaches that its cation-exchanger has an "extraordinary high capacity."

Having determined that the Examiner has reason to believe that the prior art cation-exchangers are identical or substantially identical to the claimed cation-exchangers, the burden is shifted to the Appellants to prove that the cation-exchangers described in Carbonell and Berglund do not possess the claimed functions. However, on this record, the Appellants have not demonstrated that the cation-exchangers described in Carbonell and Berglund are not capable of performing the claimed functions. *In re Yanush*, 477 F.2d 958, 959, 177 USPQ 705, 706 (CCPA 1973); *In re Casey*, 370 F.2d 576, 580, 152 USPQ 235, 238 (CCPA 1967); *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). The Appellants' mere assertion that the cation-exchangers described in Carbonell and Berglund do not possess the claimed functions is not sufficient absent supporting objective evidence. *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972).

Thus, based on the totality of the record, we determine that the preponderance of evidence weighs heavily in favor of anticipation within the meaning of 35 U.S.C. § 102 (a) and § 102(b). Accordingly, we affirm the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 102(a) and § 102(b).

CONCLUSION

The decision of the Examiner is affirmed.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2005).

AFFIRMED

clj

General Electric Healthcare Bio-Sciences Corp.
Patent Dept.
800 Centennial Ave.
Piscataway, NJ 08854