UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEFAN FISHER-FRUHHOLZ and ERIC JALLERAT

Appeal 2008-5721
Application 10/493,333
Technology Center 1700

Decided: December 23, 2008

Before EDWARD C. KIMLIN, CHUNG K. PAK, and
LINDA M. GAUGETTE, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal from the final rejection of claims 1-9. Claim 1 is illustrative:

1. A microarray device comprising a microporous polymeric membrane having multiple porous zones within said membrane arranged in a predetermined pattern, said multiple porous zones being separated from each other by gaps selected from non-porous areas and areas with

diminished porosity relative to the porosity of said porous zones, wherein said gaps have been created by exposure to a laser beam.

The Examiner relies upon the following references as evidence of obviousness:

Butler	3,224,986	Dec. 21, 1965
Daly	3,636,251	Jan. 18, 1972
Kinoshita	EP 0 656 420 A1	Aug. 19, 1993
Salinaro	WO 01/61042 A2	Aug. 23, 2001

Appellants' claimed invention is directed to a microarray device comprising a microporous polymeric membrane having multiple porous zones arranged in a predetermined pattern. The multiple porous zones are separated from each other by gaps that are either non-porous or of less porosity than the porous zones. The gaps are produced by exposure to a laser beam. According to Appellants' Specification, "[e]ach of the zones can be individually manipulated so as to permit or not permit an exchange of material between the zones" (Page 3, lines 16-17).

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

(a) Claims 1-9 over Kinoshita in view of Daly,

(b) Claims 2, 3, and 8 over Kinoshita in view of Daly and Salinaro, and

(c) Claims 2, 3, and 8 over Kinoshita in view of Daly and Salinaro.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in full agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art.

Accordingly, we will sustain the Examiner's rejection for essentially those reasons expressed in the Answer.

Kinoshita, like Appellants, discloses a microarray device having a plurality of zones arranged in a predetermined pattern wherein the zones receive a desired reagent. Also like Appellants, Kinoshita is concerned with confining the reagent to the plurality of patterned zones such that there is no or limited exchange of reagent between the zones and neighboring zones. In particular, Kinoshita discloses the following:

> The adjacent sample-receiving parts are independent and separated from each other, since when they are brought into contact with each other, the components in the reaction system or culture system retained therein will be mixed together. The materials for the support and the sample-receiving parts are selected so that the reaction or culture system kept in each sample-receiving part can be substantially kept in this part and does not escape therefrom in the course of the intended test.
>
> In order to prevent the escape of the aqueous reaction system, culture system or the like retained in the sample-receiving part from this part to the outside through the support in the course of the test, the support must be prepared from a material having relatively high hydrophobic properties. (Page 3, line 55-Page 4, line 4).

For the material of the support, Kinoshita teaches the use of materials which correspond to the presently claimed membrane materials, such as, polyamides, polycarbonates, and polypropylene (see page 5, lines 34 et seq. and claim 2 on appeal). As for the materials for Kinoshita's reagent-receiving zones, the reference teaches the uses of spongy, porous polymer substances (page 4, lines 48-49).

Accordingly, based on the disclosure of Kinoshita alone to prevent migration of components from the reagent zone, we agree the Examiner that it would have been obvious for one of ordinary skill in the art to prepare a microarray device comprising a polymeric membrane having multiple porous zones arranged in a predetermined pattern wherein the porous zones are separated from each other by gaps of non-porous areas or areas with diminished porosity relative to the porosity of the porous zones.

As recognized by the Examiner, Kinoshita does not teach that the non-porous gaps are created by exposure to a laser beam. However, the relevant claim language is a process limitation and, therefore, the appealed claims are in product-by-process format. As a result, certain principles of patent jurisprudence apply. For instance, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either § 102 or § 103 of the statute is eminently fair and acceptable. *In re Brown*, 459 F.2d 531, 535 (CCPA 1972). In such cases, the burden is properly upon the applicant to demonstrate with objective evidence that the claimed product is patentably distinct from the prior art product.

In the present case, since the membrane of Appellants and the support of Kinoshita may be the same material, e.g., polypropylene, a polycarbonate, or a polyamide, and the laser beam exposure of Appellants simply removes the grid in the membrane, we agree with the Examiner that is incumbent upon Appellants to establish that there

is structural difference between the non-porous areas within the scope of the appealed claims and those of Kinoshita's microarray device. However, no such evidence is of record. Appellants' argument that Kinoshita does not disclose a membrane is not persuasive since there is substantial correspondence between materials which Appellants term a membrane and which Kinoshita describes as a support. Appellants point to no particular definition in the present Specification for the claimed "membrane" which would serve to distinguish it over the support materials of Kinoshita that may comprise the same polymer materials.

We are also not persuaded by Appellants' argument that the testing device of Kinoshita does not comprise multiple porous zones within a membrane. The test device of the reference as a whole may be fairly characterized as a membrane and, as noted above, Kinoshita specifically teaches that the testing zones for receiving the samples may comprise spongy porous polymer substances, which areas fully meet the claimed requirement for multiple porous zones.

As should be apparent from our discussion, we find that the Daly disclosure is not necessary to support the legal conclusion that the claimed subject matter would have been obvious to one of ordinary skill in the art.

Appellants also make an argument that implies that the claimed multiple porous zones which receive the samples to be tested comprise the materials recited in claim 2. However, claim 2 defines materials for the membrane, and the membrane defined in claim 1, upon which claim 2 depends, defines the membrane as having both

multiple porous zones and non-porous areas, i.e., the microarray device as whole comprises the membrane.

Appellants do not present separate substantive arguments for any particular claim on appeal. Since we find that subject matter of the appealed claims would have been obvious to one or ordinary skill in the art over the disclosure of Kinoshita alone, it logically follows that we will also sustain the Examiner's separate § 103 rejections citing Kinoshita as the primary reference.

In conclusion, based on the foregoing, the Examiner's decision rejecting the appealed claims is affirmed.

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).

AFFIRMED

PL initials:
sld

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