

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* THOMAS LAWRENCE MILLER,  
RICHARD FRANCIS NELSON,  
and  
JOHN KEITH OSTROM

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Appeal No. 1999-0752  
Application No. 08/806,103

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ON BRIEF

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Before KIMLIN, PAK, and JEFFREY T. SMITH, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19, which are all the claims pending in the above-identified application.

Claims 1 and 14 are representative of the subject matter on appeal and read as follows:

1. A fluid treatment device comprising:

a housing defining at least one chamber therein;

means for providing a fluid to said chamber of said housing such that said fluid will provide chemical action and will move through said chamber and be maintained within said chamber at an established level, said fluid including vortex regions of turbulent flow within said device and a boundary layer region immediately adjacent at least one of said vortex regions and substantially not including vortices of said fluid therein;

means for moving a substrate through said chamber of said housing in an established direction along a path of travel such that said substrate will be exposed to both said vortex regions and said boundary layer region of said fluid moving within said chamber for an established period; and

means for providing vibrational energy to said fluid moving within said chamber to enhance the treatment of said substrate by said fluid by increasing said chemical action by said fluid, said means for providing vibrational energy positioned immediately adjacent said means for providing said fluid along said path of travel of said substrate and adapted for being partly submerged within said fluid within said chamber and being located adjacent said substrate as said substrate moves through said chamber, said means for providing vibrational energy focusing its vibrational energy at said boundary layer region of said fluid not including said vortices of said fluid therein while not being in physical contact with said housing, said boundary layer of said fluid being positioned substantially directly below said means for providing said vibrational energy along said path of travel and therefore immediately adjacent said means for providing said fluid to said chamber.

14. A method of treating a substrate with fluid, said method comprising:

providing a housing defining a chamber therein;

providing fluid to said chamber of said housing at an established rate such that said fluid will provide chemical action and will move through said chamber, be maintained at an established level within said chamber, and will include vortex regions of turbulent flow and a boundary layer adjacent at least one of said vortex regions and substantially not including vortices of said fluid therein;

moving a substrate through said chamber of said housing in an established direction along a path of travel and at an established rate such that said substrate will be exposed to both said vortex regions and said boundary layer of said fluid moving within said chamber for an established time period; and

providing vibrational energy to said fluid moving within said chamber to enhance the treatment of said substrate by said fluid by increasing said chemical action of said fluid, said vibrational energy being provided by partly submerging means for providing said vibrational energy within said fluid and activating said means while so partly submerged and while said means is also positioned immediately adjacent the means for providing said fluid to said chamber along said path of travel, while also maintaining said means for providing said vibrational energy in a non-contacting relationship with said housing, said boundary layer of said fluid being positioned directly below said means for providing said vibrational energy along said path of travel and substantially between said at least one of said vortex regions of said fluid and said means for providing said vibrational energy.

Appeal No. 1999-0752  
Application No. 08/806,103

Claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19 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 appellants regard as their invention. Claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking an enabling disclosure in the application disclosure to make and use the claimed invention.

We reverse each of the foregoing rejections for essentially the reasons set forth in the Brief and the Reply Brief. We add the following primarily for emphasis and completeness.

We turn first to the examiner's rejection of claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19, rejected under 35 U.S.C. § 112, second paragraph. The purpose of the second paragraph of Section 112 is to basically insure, with a reasonable degree of particularity, an adequate notification of the metes and bounds of what is being claimed. See *In re Hammack*, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970). As the court stated in *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971), the determination of whether the claims of an application satisfy the requirements of the second paragraph of Section 112 is

Appeal No. 1999-0752  
Application No. 08/806,103

merely to determine whether the claims do, in fact, set out and circumscribe a particular area with a **reasonable** degree of precision and particularity. It is here where the definiteness of the language employed must be analyzed -- **not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.** [Emphasis ours; footnote omitted.]

Here, the examiner criticizes the use of the terminology "boundary layer region." However, we do not believe that it can seriously be contended that the artisan would not understand what is covered by "boundary layer region" especially when it is viewed in light of pages 6, 7, 9 and 12 of the specification. We observe that the specification specifies the location of a means for providing fluid (turbulent fluid flow (vortex regions) and a boundary layer region (non-turbulent fluid flow) immediately adjacent to the turbulent fluid flow) with respect to the location of a means for providing vibrational energy (which is directed to the boundary layer region). See the specification, pages 6 and 7. We also observe that the specification specifies the function, location and frequency level of the means for providing vibrational energy, which is directed to the boundary layer region, thus impliedly defining the area covered by the claimed "boundary layer region." See the specification, pages

Appeal No. 1999-0752  
Application No. 08/806,103

9 and 12. Specifically, the specification states that the "waves [from the means for providing vibration energy (horn)] serve to substantially compress fluid 'F' in the region immediately adjacent the substrate's upper surface which in turn is located immediately below the respective projecting end portion 53 of horn 51." The ultrasonic energy frequency employed is said to be from about 10 kHz to about 50 kHz. *Id.* The ultrasonic wave energy resulting from horn is "incident upon the planar upper surfaces of the substrates at an angle of substantially 90° . . . ." *Id.* The ultrasonic wave energy is directed to a boundary layer represented by the dimension "BL" in Figure 3. See the specification, page 12.

Accordingly, we reverse the examiner's rejection of claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19 under 35 U.S.C. § 112, second paragraph.

We turn next to the examiner's rejection of claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19 under 35 U.S.C. § 112, first paragraph, as lacking an enabling disclosure in the application disclosure to make and/or use the claimed invention. As the court in *In re Gaubert*, 524 F.2d 1222, 1226, 187 USPQ 664, 667 (CCPA 1975) stated:

Appeal No. 1999-0752  
Application No. 08/806,103

To satisfy § 112, the specification disclosure must be sufficiently complete to enable one of ordinary skill in the art to make [and/or use] the invention without undue experimentation, although the need for a minimum amount of experimentation is not fatal . . . . Enablement is the criterion, and every detail need not be set forth in the written specification if the skill in the art is such that the disclosure enables one to make [and/or use] the invention. [Citations omitted.]

The determination of what constitutes undue experimentation in a given case requires the application of a standard of reasonableness, having due regard for the nature of the invention and the state of the art. See *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. & Int. 1986). The examiner has the initial burden of producing evidence or reasons that substantiate a rejection based on lack of enablement using the above-mentioned standard. See *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971); *In re Strahilevitz*, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982). Once this is done, the burden shifts to the appellants to rebut this conclusion by presenting evidence to prove that the disclosure is enabling. See *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973); *In re Doyle*, 482 F.2d 1385, 1392, 179 USPQ 227, 232 (CCPA 1973), *cert. denied*, 416 U.S. 935 (1974).

Here, we observe that the examiner has not satisfied her initial burden of producing evidence and/or scientific reasoning which would substantiate a rejection based on lack of enablement.

Appeal No. 1999-0752  
Application No. 08/806,103

The examiner has not proffered any evidence or scientific reasoning to demonstrate that undue experimentation is needed to practice the claimed subject matter. See the Answer in its entirety. The examiner simply ignores the above-mentioned guidance in the specification, the state of the art (known information not in the specification) and the nature of the invention involved. *Id.* Indeed, the examiner's analysis does not apply the standard set forth in *Forman*. *Id.*

Accordingly, we reverse the examiner's rejection of claims 1 through 3, 5, 7 through 10, 12 through 15 and 17 through 19 under 35 U.S.C. § 112, first paragraph.

As a final point, we note that the fluid treatment devices claimed in this application and U.S. Patent No. 5,512,335 are defined by "means-plus-function" terms. When the claim terms are expressed in "means-plus-function," they are interpreted as being limited to the corresponding structure described in the specification or the equivalents thereof. *In re Donaldson Co.*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (*en banc*). It follows that "means-plus-function" terms, which may be written differently, can be interpreted as being limited to the same structures if the structures corresponding to the means-plus-function terms are identical. Our cursory review of the

Appeal No. 1999-0752  
Application No. 08/806,103

drawings and the specifications in both the instant application and U.S. Patent No. 5,512,335 appears to indicate that the "means-plus-function" terms recited in the claims therein may be referring to the same fluid treatment device structures.

Thus, upon return of this application, the examiner is to properly interpret the means-plus-function limitations in the claims of the instant application and U.S. Patent 5,512,335 consistent with *Donaldson* and determine whether such interpretation would have rendered the subject matter claimed in this application unpatentable over the claims of U.S. Patent No. 5,512,335 under statutory double patenting or judicially created obviousness-type double patenting.

Appeal No. 1999-0752  
Application No. 08/806,103

In view of the forgoing, we reverse the examiner's decision rejecting all the claims on appeal under 35 U.S.C. § 112, first and second paragraphs, and remand this application to the examiner for appropriate action consistent with the above instruction.

*REVERSED and REMANDED*

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
CHUNG K. PAK	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
JEFFREY T. SMITH	)	
Administrative Patent Judge	)	

CKP:hh

Appeal No. 1999-0752  
Application No. 08/806,103

*LAWRENCE R. FRALEY*  
*IBM CORPORATION N 50 040 4*  
*1701 NORTH STREET*  
*ENDICOTT, NY 13760*