

***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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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***Ex parte*** LUKE W. LOY

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Appeal No. 95-1872  
Application 07/953,340<sup>1</sup>

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ON BRIEF

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Before GARRIS, WEIFFENBACH and OWENS, *Administrative Patent Judges*.

WEIFFENBACH, *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 and 3-5 which are all of the claims remaining in the application. We reverse.

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<sup>1</sup> Application for patent filed September 30, 1992.

### **The Claimed Subject Matter**

The claims on appeal are directed to an electro-rheological fluid composition. Appellant defines “electro-rheological fluids” on page 1 of the specification as follows:

Electro-rheological fluids are slurries composed of a non-conducting fluid medium and a particulate. The particulate is responsive to a high-voltage electric field applied across small gap (1-2mm) electrodes placed in the fluid. The reaction by the particulate effectively changes the viscosity of the fluid in the localized area between the electrodes.

The claimed electro-rheological fluid composition comprises a dielectric oil such as silicon oil and a particulate. The particulate is defined as a polymeric sponge material which has entrapped therein an electro-rheological constituent such as water. Claim 1 is illustrative of the claimed subject matter and reads as follows:

1. An electro-rheological fluid composition comprising a dielectric oil and a particulate mixed therein, said particulate being 20-50% by weight of said electro-rheological fluid composition and consisting essentially of a polymeric sponge material entrapping an electro-rheological constituent, said electro-rheological constituent being liquid having molecules with high polar moments, said polymeric sponge material being inert with respect to said dielectric oil and existing as 10-30 micron diameter beads, each said bead having a network of pores and a calculated cross-linking density in excess of 10%, said electro-rheological constituent having been entrapped in each said network of pores during polymerization of each said bead, wherein said electro-rheological constituent remains entrapped in said polymeric sponge material when mixed in said dielectric oil.

### **The Prior Art**

The following prior art reference is relied upon by the examiner in support of the rejection of the claims for obviousness:

Stangroom	1,570,234 (British Patent Specification)	Jun. 25, 1980
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The following prior art references are referred to by appellant in the Brief and Reply Brief:

Won (I)	4,690,825	Sep. 1, 1987
Katz et al.	5,073,365	Dec. 17, 1991
Liscomb	5,126,381	Jun. 30, 1992
Won (II)	5,145,675	Sep. 8, 1992
Carmody	5,145,685	Sep. 8, 1992

### **The Rejections**

Claims 1 and 3-5 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to adequately teach how to make the polymeric sponge material.

Claims 1 and 3-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Stangroom.

### **Opinion**

Having considered the entire record of this application, including the arguments advanced by both the examiner and appellant in support of their respective positions, we will not sustain any of the examiner's rejections. We agree with appellant that the claimed subject matter is not anticipated by Stangroom for reasons set forth below. We also find that the original disclosure of the application as of its filing date is enabling as to the polymeric sponge material for essentially those reasons expressed in the appellant's Brief.

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Our comments which follow with respect to the examiner's rejection under 35 U.S.C. § 112 are primarily for emphasis.

#### Rejection Under 35 U.S.C. § 112

The examiner objected to the specification and rejected claims 1 and 3-5 under the first paragraph of 35 U.S.C. § 112 for failing to disclose the chemical identity of the polymeric sponge material. On page 3, lines 13-27 of the specification, appellant states:

The particulate mixed in the dielectric oil consists of a carrier and the electro-rheological constituent, i.e. water in this case. The carrier is a micro sponge which is a polymeric bead having a cross-linking density in excess of about 10%. The micro sponge is sold under the trademarks "MICROSPONGE," "POROSPONGE" and "COMMAND RELEASE."<sup>2</sup> One such micro sponge having 22% water by volume entrapped therein during polymerization is available commercially from Advanced Polymer Systems, Inc., Redwood City, CA, as Part No. CH-196-64-ME. The carrier is sized for suspension in the dielectric oil and for free movement through any equipment filters that may be encountered during processing. Accordingly, a safe range of carrier diameter that meets these criteria is between 10-30 microns. The porous nature of the carrier allows the ratio of electro-rheological constituent volume to overall particulate volume to be maximized.

The examiner acknowledges appellant's disclosure on page 3 of the specification, but contends on page 3 of the Answer that

the description of this material [the micro sponge carrier] is limited to a disclosure of the cross-linking density and the particle size; this information is not sufficient to enable one of

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<sup>2</sup> This sentence was added to the specification in response to the examiner's first Office action on the merits. In the final rejection, the examiner objected to the sentence as being new matter. Although the examiner required cancellation of the alleged new matter, the subject matter remains in the specification. The examiner did not reject any of the claims on appeal based on the new matter objection. Accordingly, the new matter issue is not before us for consideration. See Section 2163.05 of the *Manual of Patent Examining Procedure*, 6th Edition, Rev. 3, July 1997.

ordinary skill in the art to practice the instant invention. It is further noted that appellant discloses that a micro sponge which is available commercially from Advanced Polymer Systems, Inc. may be used as the polymeric sponge material, however the trademark (here, the part number)<sup>[3]</sup> has not been accompanied by the generic terminology.

In rejecting the claims under 35 U.S.C. § 112, first paragraph, it is the examiner's burden to establish lack of enablement by compelling reasoning or objective evidence. *In re Strahilevitz*, 668 F.2d 1229, 1232, 212 USPO 561, 563 (CCPA 1982); *In re Armbruster*, 512 F.2d 676, 677, 185 USPQ 152, 153 (CCPA 1975). We find no such reasoning or evidence here. The examiner has neither established by compelling reasoning nor by presentation of objective evidence that a person of ordinary skill in this art would not have been able to practice the claimed invention without resorting to "undue" experimentation. The examiner has not explained what generic terminology must accompany the part number and why such information is necessary to enable one to practice the invention without undue experimentation, what undue experimentation is necessary and why it is necessary that the chemical composition of the micro sponge be identified in order for one skilled in the art to determine specifically what polymeric sponge material would be inert to various dielectric oils, and why the information as to the source of the micro sponge material is insufficient for one to practice the invention without undue experimentation. *See PPG Industries Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 1564, 37 USPQ2d 1618, 1623 (Fed. Cir. 1996); *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513;

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<sup>3</sup>The examiner appears to believe that the part number is a trademark. The examiner has not provided any reasons or evidence on which such a belief can be based.

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*In re Vaeck*, 947 F.2d 488, 495-496, 20 USPQ2d 1438, 1444-1445 (Fed. Cir. 1991). We find that the disclosure of the name and address of the manufacturer of the sponge material as well as at least one specific part number used by applicant in practicing the invention would have been sufficient information for a person having ordinary skill in the art to practice the invention without undue experimentation. Appellant also has made of record in the application the Won (I) patent to show that micro sponge technology was well known in the art as of the filing date of this application. Contrary to the position taken by the examiner, applicant may offer evidence, such as a single patent, which is not discussed in the specification to show knowledge possessed by those skilled in the art to establish that the specification is enabling. *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). For the foregoing reasons as well as those set forth in appellant's Brief, the examiner's rejection under the first paragraph of 35 U.S.C. § 112 is reversed.

Rejection Under 35 U.S.C. § 102(b)

The examiner rejected claims 1 and 3-5 under 35 U.S.C. § 102(b) as being anticipated by Stangroom. The patent discloses an electroviscous fluid, a fluid which according to the patentee is "capable of exhibiting an increase in apparent viscosity under the influence of an electric field" (p. 1, lines 8-17). Thus, it appears that Stangroom's fluid would be an electro-rheological fluid in accordance with appellant's definition set forth, *supra*. Stangroom's electroviscous fluid comprises "water-containing particles of a polymer having free or neutralized acid groups" dispersed in an electrically non-conducting oleaginous

vehicle (p. 1, lines 39-43) The upper limit of the particle size of the polymer is disclosed to be less than 50 microns (p. 5, lines 105-108) with Example 6 disclosing 20 micron particle sizes. The examiner acknowledges that Stangroom does not specifically disclose the polymeric particles as being polymeric sponges, but reasons that since Stangroom's polymer particles "absorb" water, the particles function in the same manner as appellant's polymeric sponge and therefore "are in fact polymeric sponges" (Answer, p. 4).

Appellant's claim 1 defines the electro-rheological fluid composition as comprising a mixture of dielectric oil and a polymeric sponge material having an electro-rheological constituent (water) entrapped therein during polymerization with the polymeric sponge material being 20-50% by weight of the electro-rheological fluid composition. The claimed polymer sponge material is described as being "inert with respect to the dielectric oil and existing as 10-30 micron beads, each said bead having a network of pores and a calculated cross-linking density in excess of 10%, said electro-rheological constituent having been entrapped in each said network of pores during polymer-ization of each said bead ...." The examiner notes that Stangroom does not teach entrapping the electro-rheological constituent in the pores of the bead during polymerization, but considers this limitation in appellant's claim 1 to be a process limitation, and as such, "the end product of Stangroom appears to be the same as the end product as instantly claimed ..." (Answer, p. 4). The examiner concludes that "it appears that the water-containing polymer particles of Stangroom are in fact polymeric sponges" because the function of Stangroom's polymeric particles is to

absorb water (Stangroom: p. 2, lines 39-71; Answer, p. 4).

We do not agree with the examiner that the claims on appeal are product by process claims. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). We are in agreement with appellant that the claimed polymeric beads are structurally different from Stangroom's polymeric particles. While appellant's claim 1 does recite that the rheological constituent is entrapped during the polymerization of each bead, we find that appellant's claims describe the polymer sponge material in terms of its physical structure, and not in terms of the process by which it was made, i.e. each polymeric bead comprises a porous matrix with water trapped within the matrix as opposed to the water being attracted to the surface of a polymeric particle because of the polymer's hydrophilic properties. The Stangroom patent discloses that "it is essential for the production of an electro-viscous effect that the polymer should contain water [an electro-rheological constituent]" (p. 2, lines 43-46). The patentee accomplishes this result by using a hydrophilic character of the polymer, i.e the charge on the polymer and the number and strength of acid groups in the polymer (p. 2, lines 39-42, p. 2, lines 60-110) to attract water as opposed to a polymer having a network of pores wherein water is entrapped as required by the claims on appeal. On this record, the examiner has not provided any evidence or scientific reasoning to show that a polymer which absorbs water because of its hydrophilic property is structurally the same as a polymer having a network of pores wherein water is entrapped.

It is well settled that anticipation under 35 U.S.C. § 102 is a factual determination. *In re Baxter*

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*Travenol Labs.*, 952 F.2d 388, 390, 21 USPQ2d 1281, 1283 (Fed. Cir. 1991) citing *In re Bond*, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). Anticipation requires prior art to describe, either expressly or under the principles of inherency, each and every element set forth in the claims. See *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). For reasons already stated, *supra*, the examiner has not established that the polymer particles of Stangroom are beads having an electro-rheological constituent entrapped therein. Moreover the examiner has not shown that each of Stangroom's polymeric particles forms a network of pores having a calculated cross-linking density in excess of 10% as required by appellant's claims. Nor has the examiner shown that the polymeric particulate disclosed in Stangroom is 20-50% by weight of the electro-rheological fluid composition. Accordingly, we find that examiner's rejection falls short of making out a *prima facie* case of anticipation.

For the foregoing reasons, the examiner's rejections under 35 U.S.C. § 112 and 102(b) are reversed.

**REVERSED**

BRADLEY R. GARRIS )  
Administrative Patent Judge )  
)  
) BOARD OF PATENT  
) APPEALS AND  
CAMERON WEIFFENBACH ) INTERFERENCES

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Administrative Patent Judge )  
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TERRY J. OWENS )  
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