

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DWIGHT F. WARREN, ROBERT S. TATE,  
and MATTHEW D. COX

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Appeal 2007-1266  
Application 10/125,204  
Technology Center 1700

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Decided: July 11, 2007

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Before CHUNG K. PAK, JEFFREY T. SMITH, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the Examiner's final rejection of claims 1-5, 8-16, and 18-19. Claims 6, 7, 17, and 20 are allowed. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We affirm.

Appellants' invention relates to a sample mounting press for molding a thermoplastic or thermosetting material around a metallic specimen for ease of handling in subsequent polishing and analyzing processes. (Specification [0002-0003]). Independent Claim 1 is reproduced below:

1. A metallographic sample mounting press comprising:

a cylindrical sample molding chamber open at opposite ends;

a ram extendable into said sample molding chamber from one end for compressing a sample molding therein; and

a rigid face seal assembly removably secured to an end of said chamber opposite said ram, said assembly having a cylindrical cap defining a flat face seal with a diameter greater than the diameter of said cylindrical sample molding chamber for externally enclosing and sealing said opposite end of said molding chamber against the pressure encountered during the molding of a metallographic sample.

The Examiner relies on the following prior art reference to show unpatentability:

Schwarzkopf US 3,922,127 Nov. 25, 1975

The Examiner made the following rejections:

1. Claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, second paragraph, as failing to comply with the written description requirement.

2. Claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, first paragraph, as indefinite.

3. Claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 102(b) as anticipated by Schwarzkopf.

## ISSUES

I. The Examiner contends that the term “rigid” renders the appealed claims indefinite under 35 U.S.C. § 112, second paragraph. Appellants contend that one of ordinary skill in the art would understand the meaning of the term “rigid” given the materials of construction and operating pressures. The issue before us is: Have Appellants shown that the Specification provides an appropriate standard for determining the degree of rigidity required for the face seal component?

For the reasons discussed below, we answer this question in the affirmative.

II. The Examiner contends that the “a rigid face seal” has not been described in the Specification and, therefore, the claims are unpatentable under 35 U.S.C. § 112, first paragraph. Appellants contend that one of ordinary skill in the art would have understood that the face seal was rigid based on the description of materials of construction and operating pressures of the claimed metallographic sample mounting press. The issue for us to decide is: Have Appellants shown that one of ordinary skill in the art would have understood from the Specification that Appellants were in possession of a metallographic sample mounting press comprising a rigid face seal assembly as now claimed?

For the reasons discussed below, we answer this question in the affirmative.

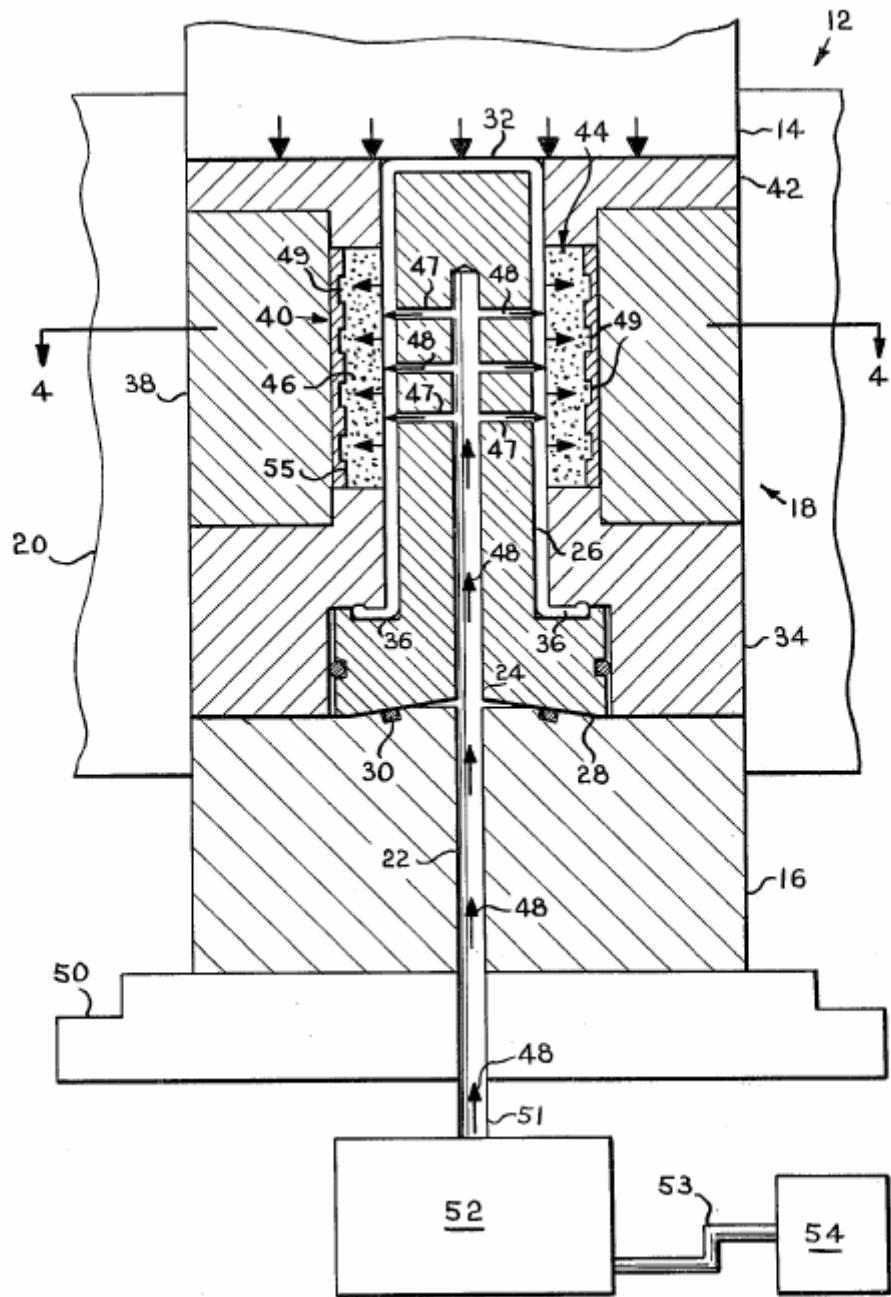
III. The Examiner contends that Schwarzkopf anticipates the claims. Appellants contend that Schwarzkopf fails to disclose a face seal having a diameter which is greater than that of the molding chamber. The issue before us is: Has the Examiner properly established that Schwarzkopf discloses the claimed rigid face seal assembly?

For the reasons discussed below, we answer this question in the affirmative.

#### RELEVANT FINDINGS OF FACT

- 1) According to the Specification, “[a] conventional thermosetting or thermoplastic resin into which the metallographic sample is encapsulated is melted under an internal mold pressure of from about 2000 psi to about 4200 psi at about 300 °F.” (Specification [0021]).
- 2) The Specification provides that “[t]he body of the mold cavity and the cap piece forming the face seal can be made of metals typically used for sample mounting presses, such as stainless steel, aluminum alloys, or the like.” (Specification [0021]).
- 3) The Specification further states that “[t]he sealing surfaces 28 and 31 of the respective members are polished to form a leak-free seal when cylinder 25 is actuated by a pressure of about 3000 psi.” (Specification [0021]).

4) Figure 1 of Schwarzkopf is shown below:



5) Schwarzkopf's Figure 1 shows a conventional hydraulic press 12 having an upper vertically aligned ram 14 and a lower vertically aligned ram 16. A removable mold 18 is positioned between the two rams 14 and 16 within a metal enclosure 20 which is made of steel. The upper ram 14 is movable downward to apply pressure to hold the mold 18 together during isostatic compaction and the lower ram 16 is movable upward to push the removable mold 18 out of the metal enclosure 20 after isostatic compaction. (Schwarzkopf, col. 2, ll. 32-40). The top ring 42 and sealing ring 34 position the character sleeve 40 within the support ring 38. The rings 42, 38, and 34 have an interleaving construction to provide a closed compression cavity 44 from which powdered metal 46 cannot escape during isostatic compression. The rings 42, 38, and 34 can be made of standard 4340 steel. (Schwarzkopf, col. 2, ll. 62-68).

#### ANALYSIS AND CONCLUSIONS

I. Have Appellants shown that the Specification provides an appropriate standard for determining the degree of rigidity required for the face seal component?

The Examiner contends that the appealed claims are indefinite under 35 U.S.C. § 112, second paragraph, because "rigid" is a term of degree and the Specification does not provide a standard by which this may be determined. (Answer 3). The relevant inquiry under § 112, second paragraph, is whether the claims delineate to a skilled artisan the bounds of

the invention. *In re Venezia*, 530 F.2d 956, 958, 189 USPQ 149, 151 (CCPA 1976).

Appellants argue that one skilled in the art of sample molding mounting processes would understand the term “rigid face seal” as referring to a face seal made of a material suitable to withstand the operational environment of a metallographic sample mounting press. (Br. 9).

Appellants direct us to paragraph [0021] of the Specification which states:

The body of the mold cavity and the cap piece forming the face seal can be made of metals typically used for sample mounting presses, such as stainless steel, aluminum alloys, or the like.

Appellants point out that the Specification teaches that sample mounting presses encounter relatively large pressures where a metallographic sample is encapsulated with internal mold pressure of from about 2,000 psi to 4,200 psi at a temperature of about 300°F. (Br. 8). Appellants further rely on the dictionary definition of “rigid” as meaning "deficient in or devoid of flexibility." (Br. 9) (citing Exhibit A, Webster Ninth New Collegiate Dictionary.)

We find Appellants’ arguments persuasive in establishing that the Specification provides an appropriate standard for determining the degree of rigidity required for the face seal component of the claimed metallographic sample mounting press. *See Seattle Box Co., Inc. v. Industrial Crafting & Packing, Inc.*, 731 F.2d 818, 826, 221 USPQ 568, 573-74 (Fed. Cir. 1984)(“When a word of degree is used the district court must determine whether the patent’s specification provides some standard for measuring that degree.”). In particular, we find that one of ordinary skill in the art would understand from the Specification that a “rigid face seal” is one which is

constructed from metals typically used for sample mounting presses such as stainless steel and aluminum alloys and forms a leak-free seal under a pressure of about 3000 psi. (*See* Findings of Fact 1-3). Accordingly, we reverse the rejection of claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, second paragraph, as indefinite.

II. Have Appellants shown that one of ordinary skill in the art would have understood from the Specification that Appellants were in possession of a metallographic sample mounting press comprising a rigid face seal assembly as now claimed?

The Examiner contends that the appealed claims do not comply with the written description requirement of 35 U.S.C. § 112, first paragraph, because “a rigid face seal” has not been described in the Specification. (Answer 3). The written description requirement of 35 U.S.C. § 112, first paragraph, requires the applicant to convey to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention now claimed. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). “[T]he claimed subject matter need not be described in haec verba in the specification in order for that specification to satisfy the description requirement.” *In re Wright*, 866 F.2d 422, 425, 9 USPQ2d 1649, 1651 (Fed. Cir. 1989).

We are in agreement with Appellants that the aforementioned portions of the Specification (i.e., Findings of Fact 1-3) reasonably convey to one of ordinary skill in the art that, at the time the application was filed, Appellants were in possession of a metallographic sample mounting press comprising a rigid face seal assembly as now claimed. Accordingly, we reverse the

rejection of claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, first paragraph.

III. Has the Examiner properly established that Schwarzkopf discloses the claimed rigid face seal assembly?

Appellants contend that Schwarzkopf fails to anticipate the claims because Schwarzkopf does not disclose a face seal having a diameter greater than the diameter of the cylindrical sample molding chamber for externally enclosing the chamber. Appellants assert that this structural limitation is found in each of independent claims 1, 8, 13, and 18 as follows:

“a diameter greater than the diameter of said cylindrical sample molding chamber for externally enclosing and sealing said opposite end of said molding chamber” (Claim 1),

“a flat surface with a diameter greater than the diameter of said cylindrical molding chamber, said seal positioned at an opposite end of said chamber to engage only an outer surface of said opposite end of said chamber” (Claim 8),

“a flat surface with a diameter greater than the diameter of said cylindrical sample molding chamber” (Claim 13), and

“a flat surface with a diameter greater than the diameter of said cylindrical molding chamber to selectively engage an outer surface of said opposite end of said chamber to form an external seal at said opposite end” (Claim 18). (Br. 11-12).

According to Appellants, Schwarzkopf’s chamber is sealed by means of a plug structure which extends into the mold chamber, and, therefore, does not anticipate the claimed face seal having a diameter which is greater than that of the molding chamber. (Br. 10).

The Examiner concedes that Schwarzkopf discloses the plug structure noted by Appellants, but points out that Schwarzkopf's sealing ring further includes a second portion having a flat sealing surface with a diameter greater than the diameter of the cylindrical molding chamber. (Answer 5).

We are in agreement with the Examiner that the "rigid face seal", as claimed, reads on this structure. (*See* Findings of Fact 4 and 5). As properly noted by the Examiner, the claim language is broadly directed to "a rigid face seal 'assembly.'" *See Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567-68, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987) (In making a patentability determination, analysis must begin with the question, "what is the invention claimed?") Thus, while the claims require a flat face seal with a diameter greater than that of the sample molding chamber, the claims do not preclude the presence of an additional sealing structure which extends into the cylindrical molding chamber, *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997)(a reference is anticipatory within the meaning of § 102 if it discloses each and every claim limitation either expressly or inherently).<sup>1</sup> Therefore, we affirm the Examiner's rejection of the claims as anticipated by Schwarzkopf.

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<sup>1</sup> We are also unpersuaded by Appellants' contention that the surfaces relied on by the Examiner "are nothing more than surfaces which form stops for the internal seals within the walls of the chamber." (Reply Br. 3). In our view, Schwarzkopf's disclosure that the rings 42, 38, and 34 provide a closed compression cavity 44 from which powdered metal 46 cannot escape indicates that the rings externally enclose and seal the molding chamber as recited in the claims. *See, Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1325 n.6, 67 USPQ2d 1825, 1832 n.6 (Fed.Cir.2003)(“The anticipation analysis asks solely whether the prior art reference discloses and

ORDER

The rejection of claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, second paragraph, as failing to comply with the written description requirement is reversed.

The rejection of claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 112, first paragraph, as indefinite is reversed.

The rejection of claims 1-5, 8-16, and 18-19 under 35 U.S.C. § 102(b) as anticipated by Schwarzkopf 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)(i)(iv).

AFFIRMED

sld/ls

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enables the claimed invention, and not how the prior art characterizes that disclosure or whether alternatives are also disclosed”).