

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TIMOTHY L. HOOPMAN
and NELSON D. SEWALL

Appeal 2006-1578
Application 09/520,032
Technology Center 1700

Decided: August 30, 2006

Before KIMLIN, PAK, and WARREN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the Examiner finally rejecting claims 17, 20, 21, 25 through 28, 33 through 54, 94 through 96 and 98 through 111. Claim 19 is also of record and was allowed by the Examiner (final rejection, mailed May 15, 2005: 8).

Claims 20 and 25 illustrate Appellants' invention of a production tool for manufacturing an abrasive article, and are representative of the claims on appeal:

20. A production tool for manufacturing an abrasive article that comprises a major surface having deployed in fixed position thereon first and second three-dimensional abrasive composites, each of said composites comprising abrasive particles dispersed in a binder and having a shape defined by a substantially distinct and discernible boundary which includes substantially specific dimensions, wherein said first abrasive composite has a shape having specific first dimensions and said second abrasive composite has a shape having second specific dimensions, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces wherein adjacent planar surfaces of one composite meet at an edge to define an angle of intersection therebetween, wherein at least one angle of intersection of said first abrasive composite is different from all of the angles of intersection of said second composite, said production tool comprising a structure having a plurality of adjacent three-dimensional cavities formed on a major surface thereof, wherein each three-dimensional cavity is defined by a substantially distinct and discernible boundary which includes substantially specific dimensions, wherein a first three-dimensional cavity has a first shape having specific first dimensions and a second three-dimensional cavity has a second shape having specific second dimensions, wherein each of said three-dimensional cavities has a boundary defined by at least four planar surfaces wherein adjacent planar surfaces of one three-dimensional cavity meet at an edge to define an angle of intersection therebetween, wherein at least one angle of intersection of said first three-dimensional cavity is different from all angles of intersection of said second dimensional cavity, wherein the production tool is a roll, and wherein each of the cavities has a single opening.

25. A production tool suitable for use in manufacturing an abrasive article comprising a plurality of cavities, wherein the cavities each have dimensions defining the cavity, wherein at least 10% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair, and wherein each of the cavities has a single opening.

The references relied on by the Examiner are:

Appeal 2006-1578
Application 09/520,032

Rochlis	US 3,312,583	Apr. 4, 1967
Bloecher	US 4,799,939	Jan. 24, 1989
Larson	US 4,903,440	Feb. 27, 1990
Pieper	US 5,152,917	Oct. 6, 1992

The Examiner has rejected appealed claims 20, 21, 25 through 28, 33 through 54, 94 through 96, and 98 through 111 under 35 U.S.C. § 103(a) as being unpatentable over Pieper in view of Rochlis and either of Larson or Bloecher (Answer 4-8), and has provisionally rejected appealed claims 17, 20, 25 through 28, 33 through 54, 94 through 96, and 98 through 111 under the judicially created doctrine of obviousness-type- double patenting as being unpatentable over claims 23, 24, 30 through 32, 89, 92, 93, and 134 through 136, 138 through 143, and 145 through 148 of copending Application 09/955,604^{1,2} (Answer 8-9).

Appellants argue claims 20, 21, 25 through 28, 33 through 54, 94 through 96, and 98 through 111 as a first group and claims 20, 21, 33 through 54, and 98 through 111 as a second group with respect to the first ground of rejection, and generally address the second ground of rejection (Br. 7, 9, 11). Thus, we decide this appeal based on appealed claims 20 and 25 as representative of the grounds of rejection and Appellants' groupings of claims. 37 CFR § 41.37(c)(1)(vii) (2005).

We affirm.

¹ We find that the stated claims are pending in Application 09/955,604 although the Examiner states the rejection as involving "claims 23, 24, 30 through 32, 89, 92, 93, and 133 through 148" of that application (Answer 8).

² We concurrently enter an opinion in related appeal 2006-1312 in application 09/955,604.

We refer to the Answer and to the Brief and Reply Brief for a complete exposition of the positions advanced by the Examiner and Appellants.

Opinion

We have carefully reviewed the record on this appeal and based thereon find ourselves in agreement with the supported position advanced by the Examiner that, *prima facie*, the claimed a production tool for manufacturing an abrasive article encompassed by appealed claims 20 and 25 would have been obvious over the combined teachings of Pieper, Rochlis, Larson, and Bloecher to one of ordinary skill in this art at the time the claimed invention was made. Accordingly, since a *prima facie* case of obviousness has been established by the Examiner, we again evaluate all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of Appellants' arguments in the Brief and Reply Brief. *See generally, In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We agree with the Examiner's findings of fact from the references and conclusions of law based on this substantial evidence as set forth in the Answer, to which we add the following for emphasis.

Appellants submit with respect to claims 20 and 25, that there is no motivation for one of ordinary skill in this art to combine Pieper and Rochlis and modify the production tools of Pieper by using different shaped cavities as suggested for production tools by Rochlis because the teachings of Pieper are limited to production tools having consistent or uniform cavities

throughout, citing, *inter alia*, Pieper at col. 1, ll. 57-61, 7, ll. 4-15 and 63-68, col. 7, l. 55, to col. 8, l. 15, col. 8, ll. 15-25, and the Pieper figures (Br. 8; Reply Br 1-4). Appellants maintain this position even in view of the Examiner's contention that Pieper would have taught "that the surface can have varied shapes" at col. 7, ll. 4-15, and col. 8, ll. 15-25 (Answer 10; Reply Br. 2-4). Appellants argue that there is no basis for the proposed modification of Pieper's production tool by using cavities of different dimensions as taught by Rochlis because the motivating advantages that the Examiner finds in this relationship, citing Answer at 7, are "already attributed to the uniformity and consistency found in the abrasive articles" prepared with Pieper's production tools (Reply Br. 5).

Appellants further submit with respect to claim 20, that Rochlis would not have taught forming a production tool in the form of a roll as required in this claim (Br. 9-10; Reply Br. 6-7). Appellants point out that the production tool illustrated in Rochlis **Figs. 21** and **22** "is in the form of a flat sheet, not a roll" and the reference would not have disclosed adapting it to a roll, citing Rochlis, col. 13, ll. 29-35 (Br. 10; Reply Br. 6).

The plain language of claim 20 specifies a production tool that comprises at least a plurality, that is, at least 2, adjacent cavities which differ in at least one angle of intersection, thus having different geometric shapes. The production tool is specified as being in the shape of "a roll." The plain language of claim 25 specifies a production that comprises at least a plurality of cavities wherein at least 10% of pairs of adjacent cavities have at least one difference in any dimension, there being no limitation on the shape of the production tool.

We find that Pieper would have disclosed to one of ordinary skill in this art a production tool for manufacturing an abrasive article which can have abrasive composites formed in a non-random array of cavities of a “wide variety of shapes” wherein the cavities of the array have “at least one specified shape.” Pieper, e.g., col. 2, ll. 1-30, col. 3, l. 61, to col. 4, l. 48, col. 6, ll. 46-53, col. 7, l. 48, to col. 8, l. 49, to col. 9, l. 23. The production tool of Pieper can be metal or plastic in the shape of, *inter alia*, “a sheet, a coating roll, a sleeve mounted on a coating roll.” Pieper, col. 9, ll. 13-43.

We find that Rochlis would have disclosed to this person a production mold or tool which can be used to form an abrasive article, wherein the tool can be flat or cylindrical or drum shaped and the cavities can have different dimensions. Rochlis, e.g., col. 1, ll. 51-56, col. 2, ll. 26-44, col. 3, ll. 25-35, col. 6, ll. 17-22, col. 7, ll. 67-71, col. 8, ll. 12-21, col. 9, ll. 72-75, col. 10, ll. 41-51, col. 11, ll. 56-61, col. 12, l. 5, to col. 13, l. 5, and col. 14, ll. 3-18. Rochlis would have illustrated in **Figs. 21** and **22** a production tool which is a flat sheet having adjacent pairs of cavities that have different geometric shapes and dimensions. Rochlis would have taught that such a production tool can also be “arcuate so as to produce a cylindrical or drum-like mold.” The geometrically different cavities are in non-random, uniform and consistent arrays as illustrated, wherein the cavities **140** and **142** have different angles of intersection and can be adjacent when the sections shown in **Fig. 21** are aligned next to each other. Rochlis, col. 13, ll. 6-61.

Contrary to Appellants’ contentions based on the combined teachings of teachings of Pieper and Rochlis, we find substantial evidence in such

teachings supporting the Examiner's position. Indeed, we fail to find any basis in Pieper which establishes that one of ordinary skill in this art would have reasonably interpreted the plural instances of the teaching that the cavity cavities arrayed in the tool can have "at least one . . . shape" to mean that the cavities can have *only* one geometric shape instead of the literal meaning in context that more than one shape can be employed in the cavity arrays.

We are not convinced otherwise by Appellants' argument that the teachings and objectives of consistent and uniform arrays of cavities taught by Pieper exclude geometrically different cavities. This is because one of ordinary skill in this art would have reasonably found in the teachings of Pieper the direction that the use of more than one geometric cavity in the array will achieve the stated objectives as long as pattern of the different geometric cavities is non-random, consistent and uniform. In this respect, it is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). We found above that the teachings of Rochlis with respect to **Fig. 21** thereof would have disclosed to this person a non-random, consistent and uniform array of different geometrically shaped cavities.

Thus, we determine that the Examiner has established that one of ordinary skill in this art would have combined Pieper and Rochlis as applied

on the basis the disclosures therein to address the matter of production tools for preparing abrasive articles wherein the cavities in the production tool are of the same or different geometric shapes, thus arriving at the claimed production tools encompassed by claims 20 and 25, including all of the limitations thereof arranged as required therein. *See generally, In re Kahn*, 441 F.3d 977, 985-89, 78 USPQ2d 1329, 1334-38 (Fed. Cir. 2006). Indeed, it is apparent from Rochlis **Fig. 21** that the cavities **140** and **142** have different angles of intersection and when adjacent would satisfy the different angle of intersection and different dimension limitations in claims 20 and 25, respectively. With respect to the “roll” limitation in claim 20, the teachings that the production tool can be in the form of a roll in Pieper and can be cylindrical or drum-like in Rochlis with respect to **Fig. 21** would have reasonably suggested such a shape for the production tool to one of ordinary skill in the art.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Pieper, Rochlis, Larson, and Bloecher with Appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 20, 21, 25 through 28, 33 through 54, 94 through 96, and 98 through 111 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

We summarily affirm the provisional ground of rejection under the judicially created doctrine of obviousness-type double patenting because Appellants have stated their intention to “appropriately” respond “upon an

Appeal 2006-1578
Application 09/520,032

indication of otherwise allowable subject matter and in the event that this rejection is maintained” (Br. 11).

The Examiner’s decision is affirmed.

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

AFFIRMED

3M Innovative Properties Company
PO Box 33427
St. Paul, MN 55133-3427

sld