



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/062,577	08/03/2011	Gregg Novick	11-023	5633
24124	7590	02/15/2018	EXAMINER	
BOHAN MATHERS PO BOX 449 PORTLAND, ME 04112-0449			RISIC, ABIGAIL ANNE	
			ART UNIT	PAPER NUMBER
			3671	
			NOTIFICATION DATE	DELIVERY MODE
			02/15/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

peter@bohanmathers.com
PMM@BOHANMATHERS.COM
jjoyce@bohanmathers.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GREGG NOVICK and GARY VERRIL

Appeal 2017-010305
Application 13/062,577
Technology Center 3600

Before JENNIFER D. BAHR, FREDERICK C. LANEY, and
ANTHONY KNIGHT, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Gregg Novick and Gary Verril (Appellants)¹ appeal under 35 U.S.C. § 134(a) from the Examiner’s decision rejecting claims 1 and 2 under 35 U.S.C. § 103(a) as unpatentable over Sansalone (US 2006/0032807 A1, pub. Feb. 16, 2006) and Sanders (US 2006/0034652 A1, pub. Feb. 16, 2006). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to the Appeal Brief, the real party in interest is Porous Technologies, LLC (hereinafter “Porous Technologies”). Br. 3.

THE CLAIMED SUBJECT MATTER

Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. A porous paver comprising:
 - a paving element consisting solely of a porous concrete made with coarse aggregate, so as to allow water to pass through the porous concrete; and
 - a retrieval means embedded in the paving element, the retrieval means comprising a receptacle that is incorporated into the paving element and is adapted to receive a tool that is used for removing and inserting the paving element into place in a paved surface.

DISCUSSION

The Examiner rejected claims 1 and 2 under 35 U.S.C. § 103(a) as unpatentable over Sansalone and Sanders. Non-Final Act. 2. Appellants argue claims 1 and 2 together in contesting the rejection. Br. 6–13. We decide the appeal of this rejection on the basis of claim 1, with claim 2 standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (permitting the Board to select a single claim to decide the appeal as to a single ground of rejection of a group of claims argued together).

The Examiner found that Sansalone discloses a porous paver as called for in claim 1, with the exception that “Sansalone fails to teach a retrieval means.” Non-Final Act. 2. The Examiner found that Sanders teaches a concrete block having embedded retrieval means as called for in claim 1, and determined that it would have been obvious “to include the retrieval means of Sanders in the paving element of Sansalone to allow the paving element to be easily installed.” *Id.* at 2–3.

Appellants do not specifically contest either the Examiner’s findings or the Examiner’s articulated reason for the combination, nor do Appellants dispute that the combination would result in the claimed invention. However, Appellants argue that they have provided evidence showing that the claimed invention fulfills a long-felt need and has achieved commercial success in the field. Br. 6–13, 15 (“List of Appended Documents”). Thus, the issue to be decided in this appeal is whether, after considering the totality of the evidence before us, the evidence of obviousness of the subject matter of claim 1 outweighs the evidence against obviousness. *See Richardson–Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1483 (Fed.Cir.1997) (holding that “we must consider all of the evidence under the *Graham* factors before reaching our decision”).²

The Evidence

Claim 1 recites “[a] porous paver.” Appeal Br. 14 (Claims App.). According to the Specification, “pavers . . . according to the invention may be any suitable shape and size,” including, “for example, pavers . . . constructed as large slabs, as small regularly shaped blocks, or as decoratively shaped elements.” Spec. ¶ 12.

Sansalone discloses a porous precast paver block of porous concrete made with course aggregate. Sansalone ¶¶ 59, 60.

² The *Graham* factors are (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) “[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., . . . [a]s indicia of obviousness or nonobviousness.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Sanders teaches a pre-cast concrete plank 12 including lifting points 30 positioned near each corner of top surface 13 so the plank “can remain level and balanced as it is lifted, transported, and lowered.” Sanders ¶ 46; Fig. 3. Each lifting point includes insert 22 in recess 25. *Id.* ¶ 47; Fig. 6. Lifting portion 23 of insert 22 is exposed in recess 25 so that a lifting apparatus, such as a grappling hook, can be attached to the lifting portion to lift pre-cast plank 12. *Id.* ¶ 47. In other words, the lifting points of Sanders facilitate the lifting, transporting, and lowering necessary for installation and removal of concrete paver elements.

The Affidavit of William M. Leo, dated April 23, 2014 (hereinafter “Leo Affidavit” or “Leo Aff.”) states that Leo, Senior Vice-President of HDR Engineering, Inc. and a consulting engineer “working in the specialty area of stormwater and combined sewer overflow impacts and mitigation” for 20 years, is working on a number of projects in which HDR plans to specify porous concrete materials and, to Leo’s knowledge, no other company, other than Appellant Gregg Novick’s company, offers a precast porous concrete slab with permanent lifting points (i.e., “retrieval means”) as disclosed in the present application. Leo Aff. ¶¶ 3–7, 15.³

The Affidavit of Gregg Novick dated April 24, 2014 (hereinafter “Novick I Affidavit” or “Novick I Aff.”) states that Novick is President of Porous Technologies (¶ 2); Novick visited several Public Works Departments in the period from June 2011 to fall of 2013 (¶ 4); during those visits, each Public Works Department recognized the advantages and benefits of using a porous concrete paver with permanent lifting means to

³ The Leo Affidavit entered into the record for the present application (May 9, 2014) includes only pages 1 and 3 (paragraphs 1–7 and 15).

permit pavers to be removed for cleaning and be reinstalled (§ 5); those Public Works Departments never considered using porous concrete for certain applications, such as bioswales, because conventional porous concrete plugs up and becomes unusable over time (§ 6); since those visits, several municipalities have specified the use of the porous paver with lifting means in stormwater control projects, in some cases specifically requiring such pavers to be made according to Novick’s specifications (§ 7). The Novick I Affidavit also states that the ability of the porous paver with lifting means to be removed for cleaning and be re-installed “has opened up a whole new application for porous pavers” (§ 6).

The Affidavit of Richard P. Mastoloni, dated August 23, 2015 (hereinafter “Mastoloni Affidavit” or “Mastoloni Aff.”) states that Mastoloni prepared an analysis of market share for precast porous concrete pavers/slabs, with and without lifting points, acquired by Porous Technologies in the past few years (§ 6), and that the analysis shows that Porous Technologies “clearly dominates the market for precast porous concrete slabs and [is] the only provider of precast porous concrete slabs with lifting points” (§ 7).

Mastoloni’s market analysis report (Exhibit P) states that the evolving state of environmental awareness has generated a need for construction materials that allow infiltration of stormwater into the groundwater supply and that porous surfaces are used to achieve this goal. Exh. P 1. However, according to the report, the use of porous pavement has been limited to specific applications because of certain tradeoffs with historical porous products. *Id.* The report discusses disadvantages of poured-in-place porous concrete and permeable interlocking concrete pavers. *Id.* at 2. The report

states that precast porous concrete slabs are the newest product in the permeable pavement market and have been designed to compensate for the many challenges presented by alternative porous pavement materials. *Id.* Mastoloni's report states that precast concrete slabs are a growing segment of the larger porous pavement market and the Stormcrete[®] precast porous concrete product, which includes permanent lifting points embedded in the surface, is pioneering their use. *Id.* at 3. The permanent lifting points of the Stormcrete[®] product "provide a means for removing, replacing[,] or accessing the subgrade below the slabs at any point during their service life." *Id.* at 3.

As part of the market share analysis, Mastoloni conducted an internet search for precast porous concrete with lifting points, which revealed two alternative products (Percoa Slabs by Percoa, USA, LLC, and RePlenish[™] by Spancrete), in addition to the Stormcrete[®] product. *Id.* The Percoa and RePlenish[™] hits were determined to be "false positives," in that no mention of *porous* or *pervious* concrete slabs was found in association with these products. *Id.* at 4; *see* Exh. Q (Appendix I) 2–3. An internet search conducted using the parameter "Precast Porous Concrete" yielded eight references related to cast-in-place porous concrete (with no applicability to precast porous, or pervious, concrete slabs), twelve references naming Stormcrete[®] as the specified product, two references to precast porous slabs generically, one reference to perforated porous pipes, and one reference to precast porous pavers, which the report characterizes as "typically dimensioned much smaller than slabs and unrelated to the search being

conducted.”⁴ Exh. P 5. On the basis of this data, the report determined that the Stormcrete[®] system has the only precast porous concrete slab product with any meaningful history, in terms of being specified in projects out to bid, completed construction projects, etc., and “[o]f all the searches conducted, only one reference was found to ‘permanent lifting points embedded in the top slab’, that was not directly related to the Stormcrete[®] System.” *Id.* The report concluded from the research conducted that Porous Technologies “has the entire market share for the Precast Porous Concrete Pavement with Lifting Points segment and the majority of market share in the larger Precast Porous Concrete Pavement segment.” *Id.*

The Affidavit of Gregg Novick dated February 5, 2015 (hereinafter “Novick II Affidavit” or “Novick II Aff.”) states that Appellant Novick has been marketing the Stormcrete[®] porous paver with lifting points (i.e., retrieval means) to municipalities since 2011, after doing a first demonstration project with a municipality in 2010 (¶ 4), and that municipalities had difficulties with porous concrete prior to the introduction of the Stormcrete[®] porous paver with lifting points, including plugging with sediment and debris over time, requiring demolition and removal of the old concrete and pouring of new porous concrete (¶ 5). Notably, the Novick II Affidavit refers to the Novick I Affidavit in support of the statement that municipalities had such difficulties. *Id.* ¶ 5; *see* Novick I Aff. ¶ 6 (stating that, prior to being introduced to Novick’s product, the municipalities Novick

⁴ It is not entirely clear why the search focused on slabs, as distinguished from other pavers, given that claim 1 recites “[a] porous *paver*” (Br. 14 (Claims App.)), not specifically a porous *slab*. Read in light of the Specification, the claim term “paver” encompasses both large slabs and smaller pavers. *See* Spec. ¶ 12.

visited never considered using porous concrete for certain applications, such as bioswales, because conventional porous concrete plugs up and becomes unusable over time). In the Novick II Affidavit, Novick asserts that the Stormcrete[®] porous paver with lifting points fulfills a longfelt need in the paving industry and has achieved commercial success (¶ 6). In support of this assertion, the Novick II Affidavit includes as an appendix Exhibit J containing lists of installations specifying the use of a porous concrete slab with lifting points; the lists include “Installed Projects” from 2010–2014 of relatively small size generating revenues totaling \$882,485 and a “Current Projects” list of 44 projects having planned completion dates in 2015 and 2016, with projected revenues totaling \$4,098,864 (¶¶ 7–8); Exh. J. The Novick II Affidavit also details successful demonstration projects in New York City using the Stormcrete[®] porous concrete system, including projects valued at over \$300,000 to \$500,000 scheduled to be installed in 2016 (¶¶ 11–15). The Novick II Affidavit further states that news of the Stormcrete[®] porous concrete system spread to municipalities in several other states and that, after hearing how easily the Stormcrete[®] porous concrete paver can be installed and replaced, several “municipalities have specified the use of a porous concrete slab with lifting points in projects,” with one of them (Syracuse, NY) banning the use of poured-in-place porous concrete (¶ 16).

The Affidavit of Steve Roy, dated January 23, 2015 (hereinafter “Roy Affidavit” or “Roy Aff.”) discusses difficulties (including quality assurance issues, loss of infiltration capacity with time from debris and sediment, requiring destruction and removal or costly and repetitive vacuum and power washing) with poured-on-site porous concrete installations (¶¶ 13–

14). The Roy Affidavit points out that the availability of the porous concrete slab with lifting points permits innovative stormwater operation and management structure that was not feasible previously (¶ 15), the inclusion of lifting points on porous concrete slabs permits easy replacement and maintenance, thereby lowering the overall life-cycle cost of the porous surface (¶ 16), and municipalities are very concerned with the service life of stormwater solutions (*id.*).

The Affidavit of Gregg Novick dated June 22, 2015 (hereinafter “Novick III Affidavit” or “Novick III Aff.”) avers that Exhibits L and M, which show sales data for the porous paver with retrieval means, “are true and accurate representations of [Porous Technology’s] sales thus far in the year 2015.” Novick III Aff. ¶ 4. Exhibit L shows square footage and revenue numbers for seven then-current projects using the Stormcrete[®] system in 2015, ranging from around 2000 square feet and around \$20,000 to over 15,000 square feet and over \$240,000, totaling 48,630 square feet and \$598,755. Exhibit M is a chart showing annual sales for Porous Technology’s porous paver with retrieval means in years 2011 through 2015. The chart shows projected additional sales of \$650,000 for 2015, but neither the chart nor the Novick III Affidavit explains the basis for those projections. Exh. M. According to the chart, Porous Technology’s annual sales grew from under \$200,000 in years 2011 through 2013, to just under \$400,000, and then to \$984,000 (\$386,000 year-to-date plus \$598,000 orders in-house) in 2015, with an additional \$650,000 projected in 2015. *Id.*

The Affidavit of David Kirby, dated June 18, 2015 (hereinafter “Kirby Affidavit” or “Kirby Aff.”), states that Kirby has expertise in “erosion and sediment control, construction management, post-construction Best

Management Practice (BMP) design, stormwater quality, management and compliance” (§ 3) and is “a Water Quality Engineer for the Ventura County Watershed Protection District in California” (§ 4). The Kirby Affidavit states that “[p]rior to finding out about the Stormcrete™ system, it appeared that the best way to retrofit a parking lot to capture and infiltrate stormwater runoff was to use cast-in-place porous concrete constructed directly on site” (§ 7) and that Kirby had reservations about cast-in-place concrete because of known quality control issues and maintenance concerns, as well as known problems with plugging of porous pavement over time with sediment and debris (§ 8). According to the Kirby Affidavit, “[t]he conventional remedy for plugged porous concrete is simultaneous pressure washing and vacuuming of the surface,” but this remedy has limited effectiveness and over time porous concrete becomes ineffective for filtration, at which time it must be ripped up and replaced with new cast-in-place porous pavement (§ 9). Such efforts are costly and present a deterrent to implementing porous concrete for stormwater management (*id.*). The Kirby Affidavit states that new cast-in-place concrete in parking lots was initially effective for infiltration of stormwater, but showed rapid clogging from sediment and debris during both wet and dry weather conditions (§ 11). The Kirby Affidavit also states that Kirby chose Porous Technologies to supply pre-cast porous concrete elements because of the anticipated cost savings associated with the lifting points of the concrete panels, which facilitate installation and temporary removal, “allowing for more effective maintenance” (§§ 13–14).

Analysis of the Evidence

The teachings of Sanders in paragraphs 46 and 47, discussed *supra*, would have provided a strong incentive for one having ordinary skill in the art to provide lifting points on Sansalone's porous pre-cast paver block in order to achieve the benefit of facilitating lifting, transporting, and lowering for installation and removal of concrete paver elements taught by Sanders. A person having ordinary skill in the art would have immediately appreciated that such lifting points would improve Sansalone's porous pre-cast paver block in the same way they improve the pre-cast concrete plank of Sanders. "[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Appellants do not assert, nor do we discern from the record, any reason why applying the lifting points technique to Sansalone's porous paver block would have been beyond the technical grasp of one of ordinary skill in the art.

The rapid increase in sales, project size, and revenues from 2011 to 2015, as shown in Exhibit M, establishes some degree of commercial success of the Stormcrete[®] system. Further, the internet searches discussed in the Mastoloni Affidavit reveal a dominant online presence of the Stormcrete[®] product in the precast porous concrete pavement segment of the market, although the objective evidence presented in Mastoloni's market analysis is insufficient to establish any quantifiable market share in this segment, nor does it reasonably support Mastoloni's conclusion that Porous Technologies has the majority of market share in this segment (Exh. P 5).

See In re Huang, 100 F.3d 135, 140 (Fed. Cir. 1996) (suggesting that a primary consideration in demonstrating actual commercial success is whether sales of the claimed invention have produced a substantial share of the marketplace).

Appellants argue that the Novick I Affidavit, the Novick II Affidavit, the Leo Affidavit, the Roy Affidavit, and the Kirby Affidavit show that the claimed invention “is fulfilling a long-felt need in the field of stormwater management.” Appeal Br. 8–12.

As explained by our reviewing court:

Longfelt need is closely related to the failure of others. Evidence is particularly probative of obviousness when it demonstrates both that a demand existed for the patented invention, and that others tried but failed to satisfy that demand. *See, e.g., In re Piasecki*, 745 F.2d 1468, 1475 (Fed.Cir.1984) (finding nonobviousness where the evidence demonstrated a failure of others to provide a feasible solution to a longstanding problem); *Alco Standard Corp. v. Tenn. Valley Auth.*, 808 F.2d 1490, 1500 (Fed.Cir.1986) (affirming a nonobviousness finding where the evidence showed that the relevant industry had searched for more than a decade for a reliable solution and that major manufacturers in the industry had tried but failed to develop such a solution).

In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litigation, 676 F.3d 1063, 1081–83 (Fed. Cir. 2012); *but see In re Depomed, Inc.*, 680 Fed. App’x. 947, 952–53 (Fed. Cir. 2017) (non-precedential) (stating, “While ‘[e]vidence is particularly probative of obviousness when it demonstrates both that a demand existed for the patented invention, and that others tried but failed to satisfy that demand,’ a patent owner may establish a long-felt but unmet need without presenting evidence of failure of others.”)

(quoting *In re Cyclobenzaprine*, 676 F.3d at 1082), *petition for cert. filed*, No. 17-114 (U.S. July 21, 2017).

The Novick I Affidavit establishes only that the Public Works Departments to whom Novick introduced his porous paver with permanent lifting means product recognized the advantages afforded by the permanent lifting means (§ 5). Although these Departments had never before considered using porous concrete for certain applications because of problems with plugging (§ 6), and decided to specify Novick's porous paver with lifting means in future projects (§ 7), the Novick I Affidavit provides no evidence that these Departments felt any need for a porous paver that could be easily removed for cleaning and reinstalled *prior to learning of the present invention*. For example, there is no evidence the Departments had ever previously sought or requested a porous paver that could be easily removed for cleaning and then reinstalled. Moreover, to the extent these municipalities had recognized a problem with using porous pavers that created a specific need for making them capable of being easily removed and reinstalled, the Novick I Affidavit provides no objective evidence showing *when* this need was recognized, so as to establish it was "long-felt," much less any evidence of any interest or attempts to solve them. As noted above, although not necessarily required to show long-felt need, evidence of such interest or attempts is particularly probative.

The Novick II Affidavit discusses difficulties municipalities had with porous concrete installations prior to Novick's invention (§ 5), but does not provide any objective evidence showing *when* such difficulties were recognized, or showing that those in the field viewed those difficulties as needing a solution. In particular, the Novick II Affidavit referred to the

Novick I Affidavit in support of the statements regarding difficulties municipalities had with porous concrete installations (*id.*). As discussed above, those municipalities simply chose not to use porous concrete because of problems with plugging, rather than evincing a need or motivation to provide an easily removable and replaceable porous concrete slab product. Indeed, there is no objective evidence that the municipalities visited by Novick felt any such need prior to being introduced to Novick's product. To the extent that these municipalities had recognized problems with porous concrete installations prior to learning of the present invention, the Novick II Affidavit again provides no objective evidence showing *when* such problems were recognized, so as to establish a need had been "long-felt."

The Leo Affidavit states that Leo is not aware of any company, other than Novick's company, that offers a precast concrete slab with permanent lifting points (§ 15), and that Leo plans to specify porous concrete material on a number of projects (§ 7). The Leo Affidavit, however, provides no evidence there was a long-felt need in the field for a porous paver that could be easily removed for cleaning and reinstalled.

The Roy Affidavit discusses difficulties with poured-on-site porous concrete installations (§§ 13–14) and states that the inclusion of lifting points on porous concrete slabs permits easy replacement and maintenance, thereby lowering the overall life-cycle cost of the porous surface (§ 15). The Roy Affidavit also states that municipalities are very concerned with the service life of stormwater solutions (§ 15). However, the Roy Affidavit does not provide any objective evidence as to when municipalities, or others in the field, affirmatively recognized the difficulties with poured-on-site porous concrete installations described by Roy, or that these problems were

recognized in the field as needing a solution prior to the presentation of Novick's solution in the form of lifting points on pre-cast porous concrete slabs.

The Kirby Affidavit states, prior to learning about the Stormcrete[®] system, the best porous concrete alternative known was cast-in-place porous concrete (¶ 7), but Kirby had reservations about using this alternative because of known problems with plugging requiring costly maintenance and eventual replacement (¶¶ 8–9) and, once Appellants' pre-cast porous concrete product became available, Kirby chose to use it in future installations (¶¶ 13–14). The Kirby Affidavit lacks any objective evidence showing when Kirby, or others in the field, recognized these problems. Nor does Kirby offer any evidence that there was interest in solving the known problems with cast-in-place concrete prior to the availability of Novick's porous concrete slab with lifting points.

In sum, rather than establishing that the claimed invention fulfills a long-felt need in the field of stormwater management, the affidavits relied on by Appellants show only that there were problems or disadvantages with the known porous concrete alternatives prior to Appellants' invention and that, once Appellants' invention became known, many in the field chose to employ it as an improvement over the alternatives previously known. These affidavits do not provide objective evidence showing *when* such problems were recognized by those in the field, so as to establish a need that was long-felt. Nor do they show those in the field had long been motivated to provide a porous paver that could be easily removed for cleaning and reinstalled, instead of just using those existing alternatives where feasible.

After considering the totality of the evidence before us, we conclude that the evidence of obviousness of the subject matter of claim 1 outweighs the evidence against obviousness. Accordingly, we sustain the rejection of claim 1, as well as the rejection of claim 2, which falls with claim 1, as unpatentable over Sansalone and Sanders.

DECISION

The Examiner's decision rejecting claims 1 and 2 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED