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THE WEBB LAW FIRM, P.C. ONE GATEWAY CENTER 420 FT. DUQUESNE BLVD, SUITE 1200 PITTSBURGH, PA 15222			JASTRZAB, JEFFREY R	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DUCTMATE INDUSTRIES, INC.,
Patent Owner

Appeal 2019-005906
Reexamination Control 90/014,073
Patent US 7,708,034 B2¹
Technology Center 3900

Before JOHN C. KERINS, DANIEL S. SONG, and BRETT C. MARTIN,
Administrative Patent Judges.

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant,² Ductmate Industries, Inc., appeals from the Examiner's decision to reject claims 1–15. Oral argument was held in this case on October 16, 2019. A transcript of the hearing will be entered into the record in due course. We have jurisdiction under 35 U.S.C. § 6(b).

¹ Issued to Douglas G. Gudenburr et al. on May 4, 2010.

² We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Ductmate Industries, Inc. App. Br. 3.

We REVERSE.

CLAIMED SUBJECT MATTER

The claims are directed “to ducts used in the heating, ventilating, exhaust, and/or air conditioning fields.” Spec. col. 1, ll. 17–18. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A circular sheet metal duct that is self sealing when put together by an installer comprising:
 - a. sheet metal;
 - b. a self locking mechanism having a female portion and a male portion on opposite ends of the sheet metal, when the male portion engages the female portion the circular duct is formed; and
 - c. a liquid applied gasketing sealant in the female portion or on the male portion that is applied during manufacturing of the duct so that when the female portion and the male portion are locked together by the installer a sealed duct is created.

REFERENCES

The prior art relied upon by the Examiner is:

Southard	US 467,999	Feb. 2, 1892
Siebenlist	US 2,201,409	May 21, 1940
Primich	US 2,698,031	Dec. 28, 1954
Curtis	US 2,756,778	July 31, 1956

Lockformer 1989, Product Specifications.

AIR-TITE 444, Technical Specification.

Georgia Power Technical Information Handbook 2002.

HVAC Duct Construction Standards, Second Edition, 1995 (“SMACNA 1995”).

HVAC Air Duct Leakage Test Manual, First Edition, 1985 (SMACNA 1985–2003).

Cold Seal Technical Specification, 2000.

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Q'SO Product Data, 1997.

Ductmate Solvseal Technical Specification, 2002.

Ductmate EnviroSeal Technical Specification, 1999.

Ductmate EZ-Seal Technical Specification, 2003.

Ductmate 5511M Sealant Technical Specification, 1996.

REJECTIONS

Claims 1–4, 8, 9, 11–13, and 15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lockformer 1989. Ans. 6.³

Claims 5, 10, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989, SMACNA 1995, and SMACNA 1985-2003. Ans. 14.

Claims 1–4, 8, 9, 11–13, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Air-Tite 444. Ans. 15.

Claims 1–4, 8, 9, and 11–14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989, Cold Seal 2000, SMACNA 1995, and SMACNA 1985-2003. Ans. 19.

Claims 1–4, 8, 9, 11–13, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Q'SO 1997. Ans. 21.

Claims 1–5, 8, 9, and 11–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Ductmate SolvSeal 2002. Ans. 22.

³ The Examiner states that all claims are rejected, but provides no independent basis for rejecting claims 6 and 7. Final Act. 2.

Claims 1–5, 8, 9, and 11–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Ductmate EnviroSeal 1999. Ans. 23.

Claims 1–5, 8, 9, and 11–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Ductmate EZ-Seal 2003. Ans. 24.

Claims 1–5, 8, 9, and 11–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Ductmate PROSeal 2000. Ans. 25.

Claims 1–5, 8, 9, and 11–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lockformer 1989 and Ductmate 5511M 1996. Ans. 26.

The Examiner also makes numerous other rejections referred to as the “Cleats Based Rejections” (Ans. 4) and the “JP ’570 Based Rejections” (Ans. 5). These rejections are made in combination with Georgia Power 2002 or Curtis. As all of these rejections suffer the same defect, we will address them *infra* and refer to them as the “Georgia Power Rejections.”

OPINION

Anticipation

The Examiner rejects claims 1–4, 8, 9, 11–13, and 15 as anticipated by Lockformer 1989. The Examiner finds that “the Lockformer sealant application is liquid during application, and while not specifically stated to solidify, those having ordinary skill in the art would have understood that in order to properly function as a sealant bead (gasket), the sealant would have

to solidify in the duct seam.” Ans. 6. Appellant argues that “[a] person of ordinary skill in the art . . . would interpret [the Lockformer sealant] as a liquid sealant that would slide into the female pocket when the male enters, otherwise it may be difficult or impossible for the male end to enter the female portion.” App. Br. 19.

The Examiner appears to recognize the weakness of the finding that Lockformer teaches the claimed sealant by including an obviousness rejection over Lockformer 1989 and Air-Tite 444 stating that “to the extent one might not construe the Lockformer sealant to meet the ‘liquid applied’ limitation,” Air-Tite 444 discloses such a sealant. Ans. 15. We note that the claims require a specific kind of sealant, namely “a liquid applied gasketing sealant.” Claim 1. Appellant provides a lengthy definition of this term in the Specification that makes clear, among other things, that the sealant is applied as a liquid; solidifies into a compressible, hardened seal; will not flow or displace itself out of the original applied area; is formulated with block co-polymers; and does not string like the mastic sealants do. Spec. col. 3, ll. 37–50.

Appellant also submits the Declaration of Edward F. Rafalski,⁴ which states that “[t]he prior art sealant used in custom rectangular duct was typically a liquid sealant, which is an adhesion type of sealant.” Rafalski Decl. 9. As Mr. Rafalski further states, adhesion sealants “adher[e] to both mating surfaces” and “would then not be effective for sealing a seam more than once or multiple times.” Rafalski Decl. 11. We are persuaded that, contrary to the Examiner’s findings, the sealant in Lockformer is more likely

⁴ Declaration of Edward F. Rafalski, dated July 10, 2013.

than not a liquid, or mastic, type sealant that does not solidify and is the type commonly used in rectangular ductwork. Anticipation may not be based on possibilities or probabilities as the Examiner has essentially done. This being more likely than not a liquid sealant, although it may seal, it does not form a gasket and cannot meet the definition of the claimed gasketing sealant. Accordingly, we do not sustain the Examiner's anticipation rejection. Because claims 6 and 7 depend from claim 1, to the extent that the Examiner's rejection applies to claims 6 and 7, it is also not sustained.

Obviousness

Lockformer

The Examiner finds that Lockformer, when taken as a whole, teaches various devices that could be used together to form a round duct with the claimed snaplock feature as well as the claimed sealant. Ans. 6. As noted above, we disagree that Lockformer teaches the claimed sealant, but, for example, the Examiner also finds that it would have been obvious to use a sealant such as Air-Tite 444, which the Examiner finds meets the claimed liquid applied gasketing sealant. *See, e.g.*, Ans. 15–16. Regarding duct shape, the Examiner bases the finding that Lockformer teaches the claimed ductwork mainly upon the statement that “Lockformer clearly states that . . . the cold sealant system of page 27 ‘*can be fitted to all Lockformer roll forming machines*’ (emphasis added).” Ans. 8.

Appellant argues that, despite this statement, Lockformer does not actually teach the compatibility of the cold sealant system of page 27 with round duct forming machines and that one of ordinary skill in the art would

have understood that this statement was meant to apply only to rectangular duct forming machines. *See, e.g.*, App. Br. 18. Appellant further supports this argument with a Declaration of Rian Scheel⁵ in which he states that this statement was meant only to apply to square and rectangular machines. Scheel Decl. ¶ 8(b)ix. Mr. Scheel also states that the Lockformer cold sealant system would be incompatible with round duct machines. *Id.* ¶ 8(d)i.

Although Appellant's arguments and Mr. Scheel's testimony are generally persuasive as to the teachings of Lockformer on its face, the Examiner also finds that even if "the cold sealant system were not physically capable of connection to the circular duct machines as proffered, the teaching to those of ordinary skill in the art remains the same, i.e., that cold sealant is applicable to circular seams nonetheless." Ans. 8. We are sufficiently persuaded that one of skill in the art would not take Lockformer as teaching the compatibility of the specific machines, but we are not persuaded that one of ordinary skill in the art would not have taken from Lockformer that some other kind of sealant applicator could be used in forming round duct work.

Having accepted this finding, we must then determine whether Air-Tite 444 teaches the claimed liquid applied gasketing sealant. Appellant again points us to the Rafalski Declaration, which generally deals with the fact that Air-Tite "seals by adhering to both mating surfaces" and therefore "would then not be effective for sealing a seam more than once or multiple times." Rafalski Decl. 11. The claims do not require reusability and so we do not find this argument persuasive.

⁵ Declaration of Rian Scheel, dated July 2, 2013.

As the Examiner finds, the sealant is liquid and “[t]he metal seams can be assembled up to 12 months from the application date,” thus suggesting that the sealant is applied as a liquid, but then cures to something resembling a gasket. We further note that the description explains that it “[w]ill not string when applying” and “[c]ures to a flexible, gummy consistency.” Air-Tite 444. As pointed out above, one of the characteristics of a gasketing sealant is that it does not string and given that it is described as curing to a flexible, gummy consistency, we agree with the Examiner that, on its face, Air-Tite 444 appears to meet the provided definition of a liquid applied gasketing sealant.

Accordingly, we conclude that the Examiner has met the burden of providing a prima facie case of obviousness in the combination of Lockformer with Air-Tite 444. The burden thus shifts to Appellant to rebut this prima facie case. Appellant offers numerous arguments as to why one of ordinary skill in the art would not have made the Examiner’s proposed combination.

We are most persuaded by Appellant’s arguments regarding how one of skill in the art actually would have understood the teachings of Lockformer along with the several of the industry participants contemporaneously extolling the virtues of the “new” system of providing round duct work that already has sealant applied. We note that Lockformer had been known in the prior art for nearly twenty years at the time of Appellant’s filing. Given the statements by Mr. Scheel, we agree that one of ordinary skill in the art would not have understood Lockformer as actually teaching the compatibility of the specific machines at issue used together in

forming circular ducts. Also, given the time since Lockformer, it appears that no one in the art actually looked to improve on the prior standard of sealing during installation despite the teachings relied on by the Examiner to conclude obviousness.

Appellant also submits at least three contemporaneous advertisements, all touting the advantages of a pre-applied sealant in round duct work that did not exist prior to the filing of the application leading to the patent at issue. The Examiner appears to have generally dismissed this contemporaneous advertising by others in the industry touting the pre-applied sealant in round duct as being an improvement. *See* Ans. 41. First, the Midwest Ducts advertisement explains that it features “tape fastener in the lock to seal the longitudinal joint on the pipe.” App. Br. 8. It further notes that this “represents the first significant improvement to round pipe products in the last 50 years” and that it “eliminat[es] the need for messy mastics or expensive foil tape.” *Id.* From this document it is clear that the standard in the art was to either apply tape or mastic during installation and that a pre-applied sealant was an innovation.

Next, the Gray Metal South advertisement characterizes its product as “already sealed pipe...like no other.” App. Br. 9 (capitalization omitted). It further states that this new pipe “is created by applying duct sealant along the entire length of the pipe in the female side of the button lock” thus “eliminat[ing] the need for tape or brushed sealant along its entire length.” *Id.* Again, this advertisement provides evidence that pre-applying sealant in round ducts was an improvement over the prior art of taping or using mastics, as asserted by Appellant.

Lastly, the Heating and Cooling Products advertisement touts its Ultra Seal Pipe (USP) as being “an innovative round duct” with “[a] unique FIP Gasket” that “[e]liminates UL181 [t]apes or [m]astics.” App. Br. 9. Given this wide industry acknowledgement that pre-applied sealant in round duct was innovative and an improvement over the then-prevalant state of the art of using tapes or mastics applied during installation, we are persuaded by this evidence in the form of secondary considerations that it would not have been obvious to one of ordinary skill in the art to have attempted to apply a gasketing sealant simply because Lockformer describes, apparently incorrectly or inadvertently, that its cold sealant system was usable with all duct forming roll machines. As such, we do not sustain the Examiner’s obviousness rejections that include Lockformer 1989.

The Georgia Power Rejections

The remaining rejections rely in some part on Georgia Power or Curtis for teaching “that circular and rectangular (square) ducts are interchangeable and functionally equivalent.” Ans. 28. Curtis and Georgia Power both deal with conversions for calculating airflow in both round and square ducts. In other words, due to the cross sectional difference in shape and the associated fluid dynamics, one simply could not use an equal cross-sectional area for equivalent airflow, but would have to use the conversions taught therein to replace round ducts with square ducts or vice versa. The existence of these conversions, however, would not convey to persons of ordinary skill in the art that all aspects involving the structure and

manufacture of round and circular ducts are interchangeable or functionally equivalent.

Neither Georgia Power nor Curtis addresses any structural and manufacturing differences between round and square ducts and, as such, we do not agree that any feature or aspect may merely be lifted from square duct technology and imported into round duct technology simply because it was known that there were particular sizes in converting from square to round to achieve equivalent airflow in each. Accordingly, we do not sustain the Examiner’s “Georgia Power Rejections.” Because claims 6 and 7 depend from claim 1, to the extent that the Examiner’s rejection applies to claims 6 and 7 it is also not sustained.

DECISION

The Examiner’s rejections are REVERSED.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-4, 8, 9, 11-13, 15	102	Lockformer 1989		1-4, 8, 9, 11-13, 15
1-5, 8-15	103	Lockformer 1989 and other references		1-5, 8-15
1-5, 8-15	103	the “Georgia Power Rejections”		1-5, 8-15
6, 7	No rejections are asserted against these claims			To the extent any rejections apply to these claims, they are reversed
Overall Outcome				1-15

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REVERSE

cdc

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